



ORIGINAL

Effect of 3 basic life support training programs in future primary school teachers. A quasi-experimental design[☆]

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KEYWORDS

Laypersons;
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Automated external
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Abstract

Aim: To evaluate the learning of basic life support (BLS) measures on the part of laypersons after 3 different teaching programs.

Design: A quasi-experimental before–after study involving a non-probabilistic sample without a control group was carried out.

Scope: Primary school teacher students from the University of Santiago (Spain).

Participants: A total of 124 students (68.8% women and 31.2% men) aged 20–39 years ($M = 22.23$; $SD = 3.79$), with no previous knowledge of BLS, were studied.

Interventions: Three teaching programs were used: a traditional course, an audio-visual approach and feedback devices.

Main variables of interest: Chest compressions as sole cardiopulmonary resuscitation skill evaluation: average compression depth, compression rate, chest recoil percentage and percentage of correct compressions. Automated external defibrillator: time needed to apply a shock before and after the course.

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PALABRAS CLAVE

Personal lego;
Soporte vital básico;
Resucitación
cardiopulmonar;
Desfibrilador externo
semiautomático

Results: There were significant differences in the results obtained after 2 min of chest compressions, depending on the training program received, with feedback devices having a clear advantage referred to average compression depth ($p < 0.001$), compression rate ($p < 0.001$), chest recoil percentage ($p < 0.001$) and percentage of correct compressions ($p < 0.001$). Regarding automated external defibrillator, statistically significant differences were found in T_{after} ($p = 0.025$).

Conclusions: The teaching course using feedback devices obtained the best results in terms of the quality of chest compressions, followed by the traditional course and audio-visual approach. These favorable results were present in both men and women. All 3 teaching methods reached the goal of reducing defibrillation time.

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Efecto de 3 métodos de enseñanza en soporte vital básico en futuros maestros de Educación Primaria. Un diseño cuasiexperimental

Resumen

Objetivo: Evaluar el aprendizaje en soporte vital básico (SVB) en personal lego tras 3 experiencias formativas diferentes.

Diseño: Se trata de un estudio cuasiexperimental antes-después de muestreo no probabilístico, sin grupo control.

Ámbito: Estudiantes de formación de profesorado de educación primaria de la Universidad de Santiago de Compostela.

Participantes: Un total de 124 estudiantes (68,8% mujeres y 31,2% hombres) de entre 20 y 39 años ($M = 22,23$; $DE = 3,79$), cuyo criterio de inclusión fue el no tener conocimientos previos sobre SVB.

Intervenciones: Se aplicaron 3 programas formativos sobre SVB a estudiantes universitarios: curso tradicional, métodos audiovisuales y dispositivos de retroalimentación.

Variables de interés principales: En masaje continuo: profundidad media de la compresión, porcentaje de reexpansión correcta, ratio de compresiones por minuto, porcentaje de compresiones correctas. Con el desfibrilador externo semiautomático: tiempo empleado en aplicar una descarga antes y después de la formación.

Resultados: Existen diferencias significativas en los resultados obtenidos tras 2 min de masaje continuo en función de los programas formativos recibidos, favorables al método de retroalimentación: ratio de compresiones por minuto ($p < 0,001$), profundidad media de la compresión ($p < 0,001$), porcentaje de compresiones correctas ($p < 0,001$) y porcentaje de reexpansión correcta ($p < 0,001$). En cuanto al desfibrilador externo semiautomático, se encontraron diferencias estadísticamente significativas en el $T_{\text{después}}$ ($p = 0,025$).

Conclusiones: El programa de formación con dispositivos de retroalimentación obtuvo los mejores resultados de calidad de compresiones cardíacas, seguido del curso tradicional y del método audiovisual. Sus superiores resultados se manifestaron tanto en hombres como en mujeres. Los 3 métodos formativos lograron el objetivo de reducir los tiempos de desfibrilación.

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Introduction

Sudden cardiac death (SCD) is one of the leading causes of death in industrialized countries, and more than 90% happen outside the hospital setting.¹ In Europe, it is estimated that the average incidence rate of cardiorespiratory arrests (CRA) is 84% for every 100,000 inhabitants per year,² with an average survival rate after hospital discharged of 10.3%. In Spain, back in the year 2013, there were 115,752 cases of acute coronary syndrome, of which 100,000 suffered from

an acute myocardial infarction, 33% of which died before arriving to a health center.³ It is estimated that by 2021 this figure will remain stable until reaching 109,772 cases, of which 81% will be due to acute myocardial infarctions.³ On the other hand, the average response time of the emergency medical teams (EMT) is between 7 and 20 min,⁴ based on the resources and location of the victim. According to a study conducted in the Balearic Islands, Spain, the average response time in Spain since the basic life support (BLS) is initiated by these EMTs⁵ is 8.3 min, which is why

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