

INPLASY

The role of the bystander in cardiopulmonary resuscitation in out-of-hospital cardiac arrest: What the evidence tells us

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Data analysis.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 02 August 2023 and was last updated on 02 August 2023.

INTRODUCTION

Review question / Objective What is the role of the bystander in cardiopulmonary resuscitation in out-of-hospital cardiac arrest?

Rationale Out-of-hospital cardiac arrest (OHCA) is a public health problem. The increase in the survival rate depends on the articulated performance of a set of links, commonly known as chain of survival. The bystander cardiopulmonary resuscitation (CPR) it is one of the decisive links. Based on this framework, this study aims to analyze evidence of the effect of bystander CPR on the survival rate in an OHCA, through a systematic literature review on this topic.

Condition being studied The systematic review will address the evidence about the effect of bystander CPR on the survival rate in an OHCA.

METHODS

Search strategy The search strategy involved the following MeSH terms: “cardiopulmonary resuscitation” AND “untrained personnel” AND “heart arrest”. These terms will be applied in 3 most relevant databases: 1) PubMed; 2) Scopus; and 3) Web of Science.

Participant or population The systematic literature review will address the role of the bystander cpr in out-of-hospital cardiac arrest, involving humans of all ages and genders.

Intervention Not applicable.

Comparator The investigation will cross data from cross-sectional or longitudinal studies with observational or comparative design. It aims to characterize the role of bystander CPR in out-of-hospital cardiac arrest, involving humans of all ages.

Study designs to be included The systematic review will include cross-sectional or longitudinal studies with observational or comparative design.

Eligibility criteria Inclusion criteria: involved cross-sectional or longitudinal studies with observational or comparative design, involving humans of all ages, manuscripts written in English, manuscripts from the last 20 years. Exclusion criteria: Review studies, protocols, comments and institutional positions or guidelines were not included.

Information sources Databases: PubMed; Scopus; Web of Science.

Main outcome(s) The studies of the systematic literature review are evaluated for information on the broad outcome of interest, which is the cardiopulmonary resuscitation performed by lay persons.

Data management Mendeley from Elsevier (PDF visualization and analysis functionality).

Quality assessment / Risk of bias analysis The search in the three databases (PubMed; Scopus; and Web of Science) included publications of the last 20 years (from 2003 to April 2023). After applying the defined terms of the search strategy, the initial result of data collection included 86 publications with potential interest.

In a subsequent step, duplicate publications were removed (n=5) before moving on to the screening phase, where 81 publications were now contemplated. In the initial phase of the screening process, some publications were excluded after an analysis of the title and abstract's suitability (n=33), leaving the remaining ones identified for retrieval (n=48). Of these last records, a small number was not retrieved after an analysis of the abstract suitability (n=3). After that, 45 records were thus evaluated for eligibility, but a number of them (n=7) was excluded after the full text reading. Therefore, at the end of the screening process, 38 studies were selected to constitute the corpus of this systematic literature review.

Strategy of data synthesis After obtaining the absolute number of studies to be considered, following the PRISMA statement guidelines, the corpus was established. The studies' analysis, characterization and organization were carried out with the support of bibliographic management software, in this case, Mendeley from Elsevier (PDF visualization and analysis functionality). Finally, the data were systematized, and the quality of the evidence was evaluated through the triangulation of the information, integrating it into a

comprehensive perspective about the role of bystander CPR in out-of-hospital cardiac arrest, based on the literature published in the last 20 years, with the scope to promote the dissemination of the obtained results by its publication.

Subgroup analysis After carrying out the research on the selected databases, the content analysis was performed considering four dimensions of the cross-sectional studies: 1) population, 2) study design, 3) method, 4) Results. For the analysis of the longitudinal studies, also four dimensions have been considered: 1) population, 2) intervention, 3) comparison, 4) Observation. All the outcomes were recorded for further analysis and information triangulation.

Sensitivity analysis Not applicable.

Language restriction The research has contemplated only English language publications.

Country(ies) involved Brazil and Portugal.

Keywords Cardiopulmonary resuscitation; untrained personnel; heart arrest.

Contributions of each author

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