Suplemento da Revista da Sociedade Portuguesa de Anestesiologia
http://revistas.rcaap.pt/anestesiologia
https://dx.doi.org/10.25751/rspa.34415

COMUNICAÇÕES ORAIS • CO04

Simulation as a Strategy for Training Cardiopulmonary Resuscitation Skills of Intensive Care Nursing Teams

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ABSTRACT

Introduction and Objectives: Cardiac arrest (CA) is a major health problem as it represents one of the most common causes of death.[1] Prompt recognition and response are essential to improve patient outcome, especially in Intensive Care Units (ICUs), where the patients, although with continuous monitoring, present higher illness severity with organ dysfunctions, contributing to worst outcomes.

Considering that nursing teams are generally the first responders to an intra-hospital CA, regular training of these teams using Simulation has been pointed as a valuable strategy to optimize Cardiopulmonary Resuscitation (CPR) skills (technical and non-technical).[2]

The aim of this study was to assess the effect of simulation on nursing teams' performance in CPR technical and non-technical skills, thus emerging the following hypothesis: High-fidelity Simulation (HFS), as a training strategy, promotes the acquisition of CPR skills in ICU nurses.

Methods: The convenience sample of this study included 28 nurses from an ICU of a university hospital, which were later divided into teams of 4.

The different teams' CPR skills were assessed by exposing them to a simulated CA scenario before (pre-test) and after (post-test) attending a 2-days HFS-based course. This included a theoretical review of technical and non-technical skills and the resolution of a simulated CA scenario by each team, followed by debriefing.

The CA scenarios used in pre-test, training and post-test differed from each other but had a similar level of difficulty.

Both pre and post-test scenarios were video-recorded for later assessment of teams' skills through structured observation, using two observational tools (one for technical and the other for non-technical skills) with a scoring system.

The data obtained were then analysed by using the Wilcoxon signed-rank test.

Results and Discussion: The assessed skills and respective results are below in Table 1.

There was a significant improvement in the overall technical skills (TS) scores (74.3±10.4 pre-test and 85.8±5.6 post-test), being airway and ventilation, chest compressions, and rhythm analysis/defibrillation the ones that presented a significant increase in scores individually.

A more noticeable improvement was observed in non-technical skills (NTS), with overall means scores nearly doubling from the pre-test (66.7±28.7) to the post-test (112.3±20.1). All NTS expressed significant improvements, with the exception of leadership.

Conclusion: Considering these findings, it is possible to identify a positive effect on ICU nursing teams' performance after simulation-based training, with relevant gains in both technical and non-technical skills. Further investigation should explore the retention of these gains.

REFERENCES

1. PERKINS, Gavin [et al.] – European Resuscitation Council Guidelines for Resuscitation 2015. Section 2. Adult basic life support and automated external defibrillation. Resuscitation. [Em linha]. 95 (2015) 81-99. [Consultado 13 Nov. 2017]. Disponível em: http://dx.doi.org/10.1016/j.resuscitation.2015.07.015.
2. SULLIVAN, Nancy J. [et al.] – Simulation exercise to improve retention of cardiopulmonary resuscitation priorities for in-hospital cardiac arrests: A randomized controlled trial. Resuscitation. [Em linha]. 86 (2015) 6-13. [Consultado 12 Dez. 2017]. Disponível em: http://dx.doi.org/10.1016/j.resuscitation.2014.10.021.

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https://dx.doi.org/10.25751/rspa.34415

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Table 1. Pre and post test scores for Technical and Non-technical skills (Mean±SD)

		Pre-test	Post-test	*p*
Technical skills	CA Recognition	96.8 ± 8.4	100 ± 0	0.16
	Airway and Ventilation	70.5 ± 16.3	81 ± 10.5	**0.04***
	Chest Compressions	61.3 ± 14.5	83.3 ± 9	**0.01***
	Rhythm analysis/ Defibrillation	85.3 ± 12.6	93 ± 9.7	**0.02***
	CPR Drugs	77.1 ± 10.4	83.3 ± 12.3	0.09
	Reversible Causes	57.1 ± 25.2	52.4 ± 32.5	0.72
	TS Total	74.3 ± 10.4	85.8 ± 5.6	**0.01***
Non-technical skills	Situation Awareness	19.7 ± 6.3	29.3 ± 5.8	**0.02***
	Interaction/ Cooperation	12.6 ± 5.6	18.9 ± 4.3	**0.01***
	Leadership	13.1 ± 7.3	21.4 ± 7.4	0.06
	Communication	21.3 ± 12.2	42.7 ± 8.1	**0.01***
	NTS Total	66.7 ± 28.7	112.3 ± 20.1	**0.01***

* $p < 0.05$, statistically significant

Tests used: Wilcoxon Sign Rank for paired samples, one-tailed.