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PROGRAMA DE TREINO DE SUPORTE BÁSICO DE VIDA PEDIÁTRICO: RELATO DE UMA EXPERIÊNCIA

PEDIATRIC BASIC LIFE SUPPORT TRAINING PROGRAM: AN EXPERIENCE REPORT

PROGRAMA DE ENTRENAMIENTO DE SOPORTE VITAL BÁSICO PEDIÁTRICO: RELATO DE UNA EXPERIENCIA

Fátima Prior[1]
Francisco Monteiro[2]
Mónica Costa[3]
Rita Carneiro[4]
Patricia Henriques[5]

[1]Hospital Dr. José de Almeida, Unidade de Cuidados Especiais Neonatais e Unidade de Cuidados Intermédios Pediátricos, Cascais, Portugal (fatima.frazao.prior@hospitaldecascais.pt)
https://orcid.org/0000-0003-2781-4314
[2]Hospital Dr. José de Almeida, Unidade de Cuidados Especiais Neonatais e Unidade de Cuidados Intermédios Pediátricos, Cascais, Portugal (francisco.alves.monteiro@hospitaldecascais.pt)
https://orcid.org/0000-0002-6589-0505
[3]Hospital Dr. José de Almeida, Unidade de Cuidados Especiais Neonatais e Unidade de Cuidados Intermédios Pediátricos, Cascais, Portugal (monica.costa.monteiro@hospitaldecascais.pt)
https://orcid.org/0000-0001-8784-9098
[4]Hospital Dr. José de Almeida, Unidade de Cuidados Especiais Neonatais e Unidade de Cuidados Intermédios Pediátricos, Cascais, Portugal (ana.carneiro.sousa@hospitaldecascais.pt)
https://orcid.org/0000-0002-5091-1174
[5]Hospital Dr. José de Almeida, Unidade de Cuidados Especiais Neonatais e Unidade de Cuidados Intermédios Pediátricos, Cascais, Portugal (patricia.henriques.fernandes@hospitaldecascais.pt)
https://orcid.org/0000-0002-8828-9878

Corresponding Author
Fátima Prior
Avenida Brigadeiro Victor Novais Gonçalves
2755-009 Alcabideche, Cascais, Portugal
fatima.frazao.prior@hospitaldecascais.pt

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RESUMO

Introdução: A equipa de enfermagem da Unidade de Cuidados Intermédios de Pediatria identificou a necessidade de aumentar a confiança da equipa na realização de manobras de reanimação à criança em estado crítico, tendo sido criado um Programa de Treino em Suporte Básico de Vida Pediátrico em 2 fases.

Objetivo: Treinar em contexto de simulação clínica competências de Suporte Básico de Vida em pediatria.

Métodos: Desenvolvimento de um programa de treino para a prática de competências de reanimação e treino do algoritmo do Suporte Básico de Vida Pediátrico.

Resultados: Participaram no programa 94 formandos: 57 enfermeiros da Unidade de Cuidados Intermédios Pediátricos, Serviço de Obstetrícia e Pediatria; 5 estudantes da licenciatura em enfermagem; 1 estudante de ensino pós-graduado em enfermagem; e 31 assistentes operacionais da Unidade de Cuidados Intermédios de Pediatria, Serviço de Obstetrícia e Pediatria.

Conclusão: Os formandos reconhecem a utilidade do conteúdo do Programa de Treino em Suporte Básico de Vida Pediátrico na sua prática quotidiana e a adequação dos seus conteúdos.

Palavras-chaves: reanimação cardiorrespiratória; treino no trabalho; simulação

ABSTRACT

Introduction: Nursing team members in the Pediatric Intermediate Care Unit identified the need to improve team´s confidence in carrying out procedures related to the child in critical condition, being developed a 2 phase Pediatric Basic Life Support Training Program.

Objective: To train in clinical simulation context Basic Life Support skills in pediatrics.

Methods: Development of a training program to practice resuscitation skills and Pediatric Basic Life Support algorithm training.

Results: 94 trainees were trained: 57 nurses from Pediatric Intermediate Care Unit, Obstetric and Pediatric Services; 5 undergraduate nursing students; 1 postgraduate nursing student; and 31 healthcare assistants from Pediatric Intermediate Care Unit, Obstetric and Pediatric Services.

Conclusion: Trainees recognize Pediatric Basic Life Support Training Program' usefulness on their daily practice and the adequacy of its contents.

Keywords: cardiopulmonary resuscitation (MeSH term); on-the-job training (MeSH term); simulation training (MeSH term)

RESUMEN

Introducción: El equipo de enfermaría de la Unidad de Cuidados Intermedios Pediátricos ha identificado la necesidad de aumentar su confianza en la realización de maniobras de reanimación al niño en estado crítico, habiendo creado un Programa de Entrenamiento en Soporte Vital Básico Pediátrico de 2 fases.

Objetivo: Entrenar en contexto de simulación clínica Habilidades de Soporte Vital Básico en Pediatría.

Métodos: Desarrollo de un programa de entrenamiento para la práctica de habilidades de reanimación y entrenamiento del algoritmo de Soporte Vital Básico Pediátrico.

Resultados: Participaron del programa 94 entrenados: 57 enfermeros de la Unidad de Cuidados Intermedios Pediátricos, Servicios de Obstetricia y Pediatría; 5 estudiantes de enfermería; 1 estudiante de posgrado en enfermería; y 31 auxiliares de salud de la Unidad de Cuidados Intermedios Pediátricos, Servicio de Obstetricia y Pediatría.

Conclusión: Los entrenados reconocen la utilidad del contenido del Programa de Entrenamiento en Soporte Vital Básico Pediátrico en su práctica diaria y la adecuación de sus contenidos.

Palabras Clave: reanimación cardiopulmonar; entrenamiento en el trabajo; simulación

Introduction

With health care and monitoring capacity evolution, life-threatening situations are increasingly anticipated and preventable, which leads to a loss of teams' expertise in responding to imminent life-threatening situations (Freitas et al., 2017).

For nurses' training, and skills improvement of those professionals who deal in their routine with the dynamics of cardiopulmonary resuscitation applying Basic Life Support (BLS), clinical simulation and its preparation stage contributes to the quality of care and patient safety, which is an important pedagogical articulation regarding nursing' teaching and learning process (Nascimento et al., 2021).

Pediatric Basic Life Support (P-BLS) maneuvers involve a set of linked procedures with the aim to provide oxygen to the brain and heart, without the use of differentiated equipment (INEM, 2017).

The improvement of cardiopulmonary resuscitation competence and teamwork skills can increase its patient population survival rate and patient safety during cardiovascular emergencies (Laco & Stuart, 2021).

Basic Life Support simulation allows nurses' training to act safely in a stressful environment, allows the learning and development of technical skills in resuscitation, as well as improves non-technical skills that include clinical judgment and decision making, thus responding to the need to obtain and maintain high standards of quality in profession exercise (Amaro, 2017).

1. Context and intervention

This Pediatric Cardiopulmonary Resuscitation program arises from the need identified by nursing team members in the Pediatric Intermediate Care Unit to improve team´s confidence in carrying out procedures related to the child in critical condition. This need is in accordance with what we find in evidence (Freitas et al., 2017; Nascimento et al., 2021: Laco & Stuart, 2021; Amaro, 2017) related with Basic Life Support simulation-based experiences in adult patients.

This project has been developed using Standards for Quality Improvement Reporting Excellence for Education (SQUIRE-EDU) framework (Ogrinc, 2016).

With the previous learning diagnosis made, this Pediatric Cardiopulmonary Resuscitation Program was designed with SQUIRE-EDU structure and according with Portuguese National Institute of Medical Emergencies (INEM) guidelines. This project was design by the first author, which is also an INEM P-BLS instructor.

The major component of this project is simulated practice, integrated into a continuum of know-how learning, and learning through doing.

The project main objective is training in clinical simulation context the resuscitation skills in pediatrics. This general aim was operationalized in the following aims:

- Increase trainees' knowledge on space, resources, and procedures in case of pediatric resuscitation.
- Develop team skills in pediatric resuscitation situations by simulating clinical scenarios.

2. Methods

Development of a training program to practice resuscitation skills and Pediatric Basic Life Support algorithm training.

2.1. Intervention

This training program involves the practice of resuscitation skills and the Pediatric Basic Life Support algorithm review by the team, developing in two phases:

- PHASE 1- all elements of the nursing team and healthcare assistants are trained in pediatric resuscitation skills training (it was initially scheduled for the first semester of 2020, having been suspended due to Covid and resumed in May 2021 and completed in February 2022). In this phase we also included the teams of nursing and healthcare assistants of Obstetrics and Pediatric inpatient services.
- PHASE 2- practice every 2 weeks with problem-case resolution in the unit, involving the professionals assigned to the shift (starting on March 2022 and with all the team elements trained)

In phase 1, training is provided by a certified team member that is also an INEM P-BLS instructor with more than 5 years of experience in an INEM certified center, and by another member previously trained for this program.

The training expositive component is made using a slide show where each moment of the algorithm is explained, and with a workshop in which airway adjuvants are presented and their use explained (nasopharyngeal tube, oropharyngeal tube, pocket mask and manual inflator).

The practical training methodology was the one recommended by INEM – 4-steps method - in which the algorithm procedure is demonstrated in real time in the first step; in the second step the trainer explains and demonstrates each moment of the algorithm; in the third step the trainees state the moment of the algorithm that the trainer will execute; and in the fourth step the trainees execute the different moments of the algorithm. The practical training is done using BLS' pediatric manikins – infant and toddler size, and at this stage (4th step) each trainer accompanies a maximum of 6 trainees.

The materials needed for the practical component are BLS' pediatric manikins (infant and toddler size), and manual insufflators suitable for the size of the infant and toddler manikin, with masks of appropriate sizes for the manikins.

In order to improve trainee's performance during the session debriefing moments are planned at the end of each panel, and an overall debriefing moment at the session end.

Phase 1 training session plan is presented on table 1.

Table 1 – Phase 1 training session plan

Timing	Session moment
15 minutes	Group presentation
25 minutes	Objectives and P-BLS algorithm presentation
15 minutes	Airway Workshop
60 minutes	Panel 1 – Pediatric Life Support with 1 resuscitator
20 minutes	Break
60 minutes	Panel 2- Pediatric Life Support with 2 resuscitators
15 minutes	Session assessment and debriefing

In phase 2, with all the team members trained, cases will be presented to the team, at the Unit's space and using a manikin, in which the team must solve the case in a practical way. Phase 2 training session plan is presented on table 2.

Table 2 – Phase 2 training session plan

Timing	Session moment
5 minutes	Case presentation by the designated trainer, with the presence of the manikin in the unit.
30 minutes	Solving the situation with the involvement of the team members assigned to the shift
15 minutes	Debriefing

Team has described during learning diagnosis that in previous BLS training sessions the evaluation moment stressed them and prevent them to take all the advantage of the learning moment, and because of that reason it was decided that there will be no formal evaluation, and that the program will focus only on practice.

Although there is no trainee's evaluation, the program needed to be assessed, for that reason at the end of each phase 1 session a query was applied in order to understand program relevance on their practice.

During phase 1 all nurses and healthcare assistants of the three services that were included, were trained, on a total of 94 trainees. Phase 2 is being prepared.

2.2. Analysis

All the 94 trainees answered the training session evaluation questionary at the end of the training session to evaluate their satisfaction.

The training session evaluation questionary (Lusíadas Knowledge Center Model) was applied in order to understand trainees' opinion about this Pediatric Basic Life Support Training Program, specially about the "Usefulness of the training content", "Adequacy of the Program in relation to the contents" and "Overall Course Rating". Answers were on a Likert scale of 0-5, where 0 is not at all useful/adequate and 5 is totally useful/adequate

From the data collected it was designed the frequency table and calculated the average and standard deviation (Std Deviation) in each parameter.

3. Results

A total of 94 trainees were trained: 57 nurses from Pediatric Intermediate Care Unit, Obstetric and Pediatric Services; 5 undergraduate nursing students; 1 postgraduate nursing student; and 31 healthcare assistants from Pediatric Intermediate Care Unit, Obstetric and Pediatric Services.

Individual feedback was given at the debriefing moment, in order to promote trainee's performance, which was perceived by trainers and trainees.

From the session evaluation questionary trainees have indicated that skills training sessions in P-BLS have been relevant to their clinical practice, classifying with an average of 4.7 the "Usefulness of the training content" with a 0,478 standard deviation, an average of 4.6 the "Adequacy of the Program in relation to the contents" with an 0.505 standard deviation and 4.7 on the "Overall Course Rating" with an 0,444 standard deviation. Results are presented at Table 3.

Table 3 – Frequency table of results

Usefulness of the training content		Adequacy of the Program in relation to the contents		Overall Course Rating	
Value	Frequency	Value	Frequency	Value	Frequency
3	1	3	1	3	0
4	25	4	32	4	25
5	68	5	61	5	69
Total	94	Total	94	Total	94
Std Deviation	0,478	Std Deviation	0,505	Std Deviation	0,444

4. Discussion

It is recognized that to better respond to life threatening events P-BLS training is essential; It promotes psychomotor and teamwork skills, allowing trainees to better think the space, resources, and procedures in case of pediatric resuscitation.

This P-BLS Training Program had a good team's adhesion in this first phase, recognizing the trained members this program relevance for their daily clinical practice, what is coincident with findings in emergency settings (Amaro, 2017; Laco. & Stuart, 2021).

Briefing and debriefing moments allowed trainees to improve their performance/confidence on the subsequent panels, which was also described in evidence (Nascimento et. al, 2021; Laco & Stuart, 2021).

This program intends to be complementary to the Hospital's BLS Program, which is mandatory to accomplish in accordance with national guidelines every 5 years.

We believe that with phase 2 implementation the team will consolidate the training received on phase 1 and improve their response when P-BLS skills are needed. Their performance will be assessed by peer's review during debriefing, to improve their practice in further situations. An observation chart is being considerate to measure the accomplishment of Program's objectives.

Conclusion

A P-BLS Training Program provides training opportunities to recreate application of skills in a safe environment, allowing trainees to better think the space, resources, and procedures in case of pediatric resuscitation.

Pediatric Basic Life Support Training Program' usefulness is recognized by trainees, as well as the adequacy of its contents.

The attention from other Hospital departments on this program makes us believe that can be reproduced in other contexts, with potential to improve BLS skills on health practitioners.

Conflicts of Interest

None.

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This work has not received any contribution, grant or scholarship.

Previous Presentations

As Poster with title "Treino de competências em reanimação pediátrica: narrativa de uma experiência" at IV Seminário Internacional do Mestrado em Enfermagem - Escola de Enfermagem (Lisboa) – Instituto de Ciências da Saúde - Universidade Católica Portuguesa, on November 26th, 2021.

As free Comunication with title "Treino de competências em Suporte Básico de Vida Pediátrico: um programa em implementação" at IX Encontro de Benchmarking da Mesa do Colégio da Especialidade de Enfermagem de Saúde Infantil e Pediátrica, on June 3th, 2022.

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