

ORIGINAL ARTICLE

CARDIOPULMONARY RESUSCITATION TEACHING BY VIDEO CLASS\*  
ENSINO DE RESSUSCITAÇÃO CARDIOPULMONAR POR MEIO DE VIDEOAULA  
ENSEÑANZA DE LA REANIMACIÓN CARDIOPULMONAR POR VIDEOCLASE

Alessandra Rosa Martins<sup>1</sup>, Maisa Lima Silva<sup>2</sup>, Marco Túlio Menezes Carvalho<sup>3</sup>, Juliana da Silva Garcia Nascimento<sup>4</sup>, Danyelle Oliveira Toledo<sup>5</sup>, Jorge Luiz da Silva<sup>6</sup>, Mateus Goulart Alves<sup>7</sup>

ABSTRACT

**Objective:** to raise knowledge about cardiopulmonary resuscitation in adults in Basic Life Support, with the use of automatic external defibrillator, in Nursing professionals who work in a Emergency Care Unit before and after a training program, using the video class strategy. **Method:** this is a quantitative, descriptive, quasi-experimental study conducted with 40 Nursing professionals from a Emergency Care Unit. Data was collected through a previously validated specific questionnaire with 12 multiple choice questions. Data were analyzed using simple descriptive statistics. Results: It was observed that 51.6% of respondents correctly answered the questionnaire before the training and after training, it was found a correctness of 59.3%. **Conclusion:** it was noticed the insufficient knowledge about cardiopulmonary resuscitation by the participants and that the strategy of the video lesson cannot be considered effective for teaching this procedure to Nursing professionals working in Emergency Care Units. It is pointed out that these data also demonstrate the importance of continuing training with other strategies in order to obtain better results in patient care. **Descriptors:** Nursing Team; Cardiopulmonary Resuscitation; Inservice raining; Audiovisual Aids; Knowledge; Instructional Films and Videos.

RESUMO

**Objetivo:** levantar o conhecimento sobre a ressuscitação cardiopulmonar no adulto em Suporte Básico de Vida, com o uso do desfibrilador externo automático, em profissionais de Enfermagem que atuam em uma Unidade de Pronto Atendimento antes e após um programa de capacitação, utilizando a estratégia da videoaula. **Método:** trata-se de um estudo quantitativo, descritivo, quase-experimental, com 40 profissionais de Enfermagem de uma Unidade de Pronto Atendimento. Realizou-se a coleta de dados por meio de um questionário específico sobre o tema, previamente validado, com 12 questões de múltipla escolha. Analisaram-se os dados por meio da estatística descritiva simples. **Resultados:** observou-se que 51,6% dos entrevistados responderam corretamente ao questionário antes da capacitação e, após a capacitação, evidenciou-se um acerto de 59,3%. **Conclusão:** percebeu-se a insuficiência do conhecimento sobre a ressuscitação cardiopulmonar pelos participantes e que a estratégia da videoaula não pode ser considerada efetiva para o ensino desse procedimento para os profissionais de Enfermagem que atuam em Unidades de Pronto Atendimento. Aponta-se que estes dados também demonstram a importância de se dar continuidade à capacitação com outras estratégias, a fim de se obter melhores resultados na assistência ao paciente. **Descritores:** Equipe de Enfermagem; Reanimação Cardiopulmonar; Capacitação em Serviço; Recursos Audiovisuais; Conhecimento; Filmes e Vídeos Educativos.

RESUMEN

**Objetivo:** aumentar el conocimiento sobre la reanimación cardiopulmonar en adultos en Soporte Vital Básico, utilizando el desfibrilador externo automático, en profesionales de Enfermería que trabajan en una Unidad de Atención de Emergencia antes y después de un programa de capacitación, utilizando la estrategia de videoclase. **Método:** este es un estudio cuantitativo, descriptivo, cuasi experimental realizado con 40 profesionales de Enfermería de una Unidad de Atención de Emergencia. Los datos fueron recolectados a través de un cuestionario específico previamente validado con 12 preguntas de opción múltiple. Los datos se analizaron mediante estadísticas descriptivas simples. **Resultados:** se observó que el 51.6% de los encuestados respondieron el cuestionario correctamente antes del entrenamiento y después del entrenamiento, se evidenció una precisión del 59.3%. **Conclusión:** los participantes notaron un conocimiento insuficiente sobre la reanimación cardiopulmonar y que la estrategia de la lección en video no puede considerarse efectiva para enseñar este procedimiento a los profesionales de Enfermería que trabajan en las Unidades de Atención de Emergencia. Se señala que estos datos también demuestran la importancia de continuar el entrenamiento con otras estrategias, a fin de obtener mejores resultados en la atención al paciente. **Descriptor:** Grupo de Enfermería; Reanimación Cardiopulmonary; Capacitación en Servicio; Recursos Audiovisuales; Conocimiento; Películas y Vídeos Educativos.

<sup>1,2,3</sup>State University of Minas Gerais/UEMG. Passos (MG), Brazil. <sup>1</sup><https://orcid.org/0000-0002-3824-1016> <sup>2</sup><https://orcid.org/0000-0003-0346-7557>  
<sup>3</sup><https://orcid.org/0000-0001-9816-8407> <sup>4</sup>University of São Paulo/USP. Ribeirão Preto (SP), Brazil. <sup>4</sup><https://orcid.org/0000-0001-5793-2456>  
<sup>5,6,7</sup>University of Franca/UNIFRAN. Franca (SP), Brazil. <sup>5</sup><https://orcid.org/0000-0002-2088-112X> <sup>6</sup><https://orcid.org/0000-0002-3727-8490> <sup>7</sup><https://orcid.org/0000-0003-0680-6817>

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## INTRODUCTION

It is considered extremely important to evaluate the knowledge of the Nursing team about Cardiopulmonary Arrest (CPA) and cardiopulmonary resuscitation maneuvers (CPR), because, despite recognizing the importance of the theme, many professionals may not have adequate knowledge about the procedures and the optimal care sequence advocated by the American Heart Association (AHA) guidelines.<sup>1</sup>

It is pointed out that the training of nursing professionals, carried out through a dynamic and evidence-based learning process, enables the creation of answers to questions and provides professional qualification.<sup>2</sup>

It is noteworthy that the use of technologies in the teaching-learning process is considered a significant advance, since technologies are part of everyday life and facilitate access to information.<sup>3</sup>

It is suggested that the use of Virtual Learning Environments (VLE) may favor digital inclusion, besides stimulating the teaching-learning process, making the classes more dynamic, providing greater interactivity and favoring learning.<sup>4</sup>

It is known that the adaptation of VLE to the training of nursing professionals, through the use of technological resources, is a strategy well accepted by the team.<sup>2</sup>

It is emphasized that the teaching methodology, with the use of technologies, generates interest in the participants and promotes improvements in the training process, directly reflecting on the care provided to the patient.<sup>4</sup>

The use of media, such as videos, is related to the development of the educational system, becoming an indispensable tool to promote improvements in the quality of education.<sup>3</sup>

The AHA emphasizes the need for CPA/ CPR training using technologies, aiming at the appropriate training process.<sup>5</sup>

It is recommended that in vocational training, short videos should be applied, including in CPR, highlighting that technological resources improve learning.<sup>6</sup>

Thus, it is indispensable that the Nursing team improve through training with teaching strategies associated with the use of technologies, especially the use of videos.

## OBJECTIVE

- To raise knowledge about cardiopulmonary resuscitation in adults in Basic Life Support, using the automatic external defibrillator, in Nursing professionals who work in a Emergency Care Unit before and after a training program, using the video class strategy.

## METHOD

This is a quantitative, descriptive, quasi-experimental, before and after study,<sup>7</sup> developed at the Emergency Care Unit (ECU) of a city in the interior of Minas Gerais (MG), Brazil.

The sample consisted of 40 nursing professionals. The inclusion criteria were the professionals who work in direct patient care and participate in all stages of the study; as exclusion criteria, professionals who were away from work due to vacation or sick leave during the data collection period were excluded.

The pre-test, post-test and video lecture questionnaires addressing adult CPR in SBV using DEA were elaborated and validated.<sup>8</sup> Contact was made with the author, who authorized the use of the instrument in this study. Please note that the original questionnaire contains 20 questions and for this study 12 were selected. It is noted that the video lesson lasts 18 minutes.

For the recruitment, a visit to the unit was carried out by the researchers, to personally invite the nursing professionals and to make available, in the notice board, the information regarding the study participation.

Data was collected from the unit itself, from June 28 to July 29, 2018, divided into three stages.

In step one, the participants were approached in a private room, and the objective of the study was exposed. For those who agreed to participate, the Free and Informed Consent Term (FICT) was signed, followed by a questionnaire to characterize the participant (professional category, safety in performing CPR, previous CPR attendance, CPR courses, gender, age and length of service in the ECU) and pretest, aiming at identifying the knowledge of Nursing professionals before the intervention.

In step two, the intervention was performed. Participants were provided with video lessons via a multiplatform instant messaging application (WhatsApp). The following instructions were sent along with the video: watch the video at least twice every other day for a period of 15 days; confirm receipt of the video lesson and, after watching the video content, send a message to the researcher responsible for the post-test schedule.

Step three was performed at a scheduled date and time, in the unit itself, in a private room, and the post-test questionnaire was applied to identify the knowledge of nursing professionals after the intervention.

The data collected was stored and processed in a double-digit Microsoft Excel® spreadsheet, performed by two people, with subsequent validation to obtain reliable data and, for data analysis, we used the descriptive statistics,

analyzing the information by simple frequency and presenting them in tables.

The research was approved by the Research Ethics Committee (REC) of the Minas Gerais State University (UEMG) under CAAE 91302418.0.0000.5525 and opinion number 2.764.100.

## RESULTS

The sample of this study was constructed by 74% (40) of the number of members of the Nursing team, considering a total of 54 professionals.

The characterization of the participants is presented in table 1.

Table 1. Characterization of study participants. Passos (MG), Brazil, 2018.

Professional category	n	%
Nurse	11	27.5
Nursing technician	29	72.5
<b>Safety in the application of cardiopulmonary resuscitation</b>		
Yes	32	80
No	08	20
<b>Prior care to cardiopulmonary arrest</b>		
Yes	36	90
No	04	10
<b>Refresher course in cardiopulmonary resuscitation</b>		
Yes	23	57.5
No	17	42.5
<b>Gender</b>		
Male	11	27.5
Female	29	72.5
<b>Age</b>		
Average in years	42	
<b>Acting time in Emergency Unit</b>		
Average in years	08	

Table 2. Pretest and posttest results related to participants' knowledge of CPR in adult SBV using AED. Passos (MG), Brazil, 2018.

Variables	Pre-test		Post-test	
	Correct n (%)	Incorrect n (%)	Correct n (%)	Incorrect n (%)
Irresponsiveness Assessment	30 (75)	10 (25)	32 (80)	08 (20)
Pulse and breath assessment	14 (35)	26 (65)	21 (52.5)	19 (47.5)
ETC Professional Relay	27 (67.5)	13 (32.5)	30 (75)	10 (25)
Place of hands of the professional at ETC	04 (10)	36 (90)	02 (05)	38 (95)
ETC Depth	27 (67.5)	13 (32.5)	33 (82.5)	07 (17.5)
ETC Frequency	28 (70)	12 (30)	35 (87.5)	05 (12.5)
VVAA permeability	22 (55)	18 (45)	29 (72.5)	11 (18.5)
Ventilation mask bag management	08 (20)	32 (80)	04 (10)	36 (90)
Performing synchronous ventilated ETC	33 (82.5)	07 (17.5)	34 (85)	06 (15)
Immediate conduct upon arrival of DEA	20 (50)	20 (50)	25 (62.5)	15 (37.5)
SAV action	28 (70)	12 (30)	35 (87.5)	05 (12.5)
CPA/CPR Registration	07 (17.5)	33 (82.5)	07 (17.5)	33 (82.5)

It is noteworthy that most participants are composed of nursing technicians, claiming to have safety in the application of CPR and have already performed CPA. It is found that the predominant gender is female, the average age among the participants is 42 years old and the average time working in ECU is eight years. It is alarming that 42.5% (17) stated that they had not performed any CPR update activities after the initial basic training. Pre-test and post-test results are shown in table 2.

Incorrect answers in the results obtained in the pretest application are highlighted: 65% (26), in the pulse and respiration evaluation; 90% (36), in

the place of the hands of the professional in External Thoracic Compression (ETC); 80% (32), in the management of the mask-bag for ventilation and 50% (20), in the immediate conduct upon arrival of the DEA.

After the intervention, after the application of the intervention, there is an increase in knowledge regarding pulse and breathing evaluation and immediate conduct upon arrival of the DEA; However, the reduction in knowledge regarding the location of the hands of the professional in the ETC and the management of the mask-bag for ventilation was identified, and

there was no change regarding the knowledge about the registration of the CPA/CPR.

Before training, in the pretest application, 51.6% of participants had knowledge about the items evaluated; Therefore, with the intervention, in the post-test, 59.3% of the Nursing team's knowledge about adult CPR in BLS was achieved, using the DEA.

## DISCUSSION

In studies, it is pointed out that women predominate in Nursing, by tradition and culture of the profession. However, there is a growing presence of men, which affirms the emergence of a new trend: the masculinization of the category,<sup>9-10</sup> which differs from that evidenced in this study, in which the predominant profile is female.

The concept of "professional maturity" is applied by some authors to individuals aged between 36 and 50 years, considering that they are professionals in full development of their cognitive skills, techniques and nursing practices, being prepared, properly qualified and definitively inserted in the labor market.<sup>9</sup>

It is revealed that the average age of the participants of this study was 42 years, thus, it can be seen that, in this aspect, there is a tendency of qualification.

It is assessed that whether a professional feel safe or not is directly related to the final outcome of the service, ie, its success.<sup>11</sup>

Nursing professionals are generally the first to witness CPA, as they are in direct contact with patients, thus, these professionals need to have up-to-date technical knowledge and practical skills developed to contribute effectively to CPR maneuvers.<sup>12-3</sup>

It is pointed out in the data obtained in this study that 20% of participants do not consider themselves safe to perform CPR, alarming information, since it is the ECU, where there are frequent attendances of CPA. CRP is known to be a relatively frequent emergency in any emergency care service, especially in the ECU.

It is evaluated with the evolution of CPR techniques and the improvement of professional equipment and training that success in CPR can be achieved, contributing to the survival of the victim.<sup>14</sup>

It is emphasized that it is extremely important to evaluate the knowledge of the Nursing team about CPA and CPR maneuvers, because, although the team recognizes the importance of the theme, many professionals may not have adequate knowledge about the procedures and ideal care sequence recommended by the AHA guidelines.<sup>1</sup>

Studies that assess the knowledge of the Nursing team about CPR maneuvers are essential, since the guidelines that guide CPA care change

every year, thus requiring these professionals to constantly update themselves in the area and enabling health services to develop teaching strategies that address the real difficulties encountered by health professionals in CPA care.<sup>15</sup>

In order to ensure effective and safe care, it is necessary that the professionals involved have preparation and knowledge, as the lack of information has significant consequences, such as damage to the care provided and the survival of the victim.<sup>1</sup>

It is noted that learning happens through various experiences and teaching methods,<sup>16</sup> is influenced by educational contexts (organization, institutional culture and pedagogical philosophy), content (teaching problems and training needs), interpersonal (teacher-student and student-student relationship), (interest/motivation, experience, learning style, aptitude), among others, characterizing it as complex and subject to significant changes over the years.<sup>17</sup>

The fact that the development of learning is strictly related to the use of strategies that encourage the participants' development is highlighted.<sup>18</sup>

Considering that the objective of learning in the CPR theme, the construction of knowledge and the acquisition of skills require a standard of excellence for it to be performed properly.<sup>19</sup>

It is noted that the International Liaison Committee on Resuscitation (ILCOR), representative of the AHA, discusses the importance of CPR training and emphasizes that it should be tailored to the target audience, in different modalities, offering alternative means of teaching, aiming at ensuring the acquisition and retention of knowledge and skills in the care of CPA.<sup>20</sup>

It is considered indispensable that nursing professionals working in the ECU seek to constantly train themselves in CPR, aiming at improvements in the quality of patient care, regardless of the teaching strategy adopted.

One limitation of this study is the number of participants, however, it is noteworthy that it was developed in a city in the interior of Minas Gerais, and the sample was 74% of nursing professionals working in the ECU involved in the research.

## CONCLUSION

It is concluded that this study demonstrated an inexpressive index of nursing professionals' knowledge about adult CPR in BLS, with the use of DEA, before the intervention through the video lesson. An insignificant increase in participants' knowledge after teaching strategy using video class was detected.

It is noteworthy that such evidence demonstrates the need for investments in training

and the promotion of new research on this theme, involving other health professionals and, mainly, seeking to identify effective teaching strategies that are appropriate to the target audience.

It can be concluded, through this study, that the use of video classes for the qualification of Nursing professionals working in ECUs may not be effective for teaching adult CPR in BLS using DEA.

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#### Corresponding author

Mateus Goulart Alves

Email: [mateusgoulartalves@gmail.com](mailto:mateusgoulartalves@gmail.com)

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