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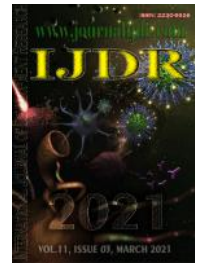
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## MANAGEMENT OF THE CENTER FOR PERMANENT EDUCATION TO CONTROL THE INFECTION OF SARS-CoV-2 (COVID-19) IN THE HOSPITAL ENVIRONMENT: INTEGRATIVE LITERATURE REVIEW

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### ABSTRACT

**Introduction:** The Center for Permanent Education (CPE) in hospitals aims to act in the updating and professional improvement of employees, for this it is necessary to carry out the management of the sector, observing the demand for subjects, proposing a planning, executing and evaluating the activities. Due to the pandemic caused by the SARS-CoV-2 virus, which causes the Coronavirus disease (COVID-19), the CPE has the function of planning, organizing and providing support to the Permanent Health Education actions to health professionals in the front line of care. **Objective:** To describe the management of CPE activities to control SARS-CoV-2 infection in the hospital environment in the face of the COVID-19 pandemic. **Materials and methods:** An integrative review, the articles will be searched for on the websites of PubMed, LILACS and SciELO with the descriptors: permanent education and COVID-19, after the collection the articles were tabulated. **Results:** Of the 261 articles found in the searches, 5 were eligible, 40% of the articles report experiences in the Americas, 40% addressed the correct use of Personal Protective Equipment and 80% had at least one author linked to a university. **Final considerations:** there are few articles that portray the experiences in relation to the planning and execution of the CPE during the COVID-19 pandemic period around the world. The importance of having frequent training is emphasized, regardless of the methods used, to improve health professionals, giving value to the presence of Universities in this work process.

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## INTRODUCTION

Activity management occurs after the survey of demand/need of the sectors or updating a given subject; the next step is the planning of an action, and after the execution an evaluation is made in order to observe improvements in the quality indicators of care and without causing harm to employees, this evaluation can be observed either through improvements in the results or through reports of employees or customers, in addition to proposing tools that are subsidized by technical-scientific knowledge to assist in the work process (Kurcгант et al. , 2009). Within the hospital environment it is considered that training can be one of the tools for management, thus the Center Permanent Education (CPE) enables an educational perspective, through activities that contribute to a better understanding of the "ways of knowing" and the "ways of doing" in order to have repercussions on the care provided and on the safety of

the patient and the professional (Flores, Oliveira, Zocche, 2016). The management of activities in the hospital environment carried out by CPE can contribute to coping with the disease by the new Coronavirus (COVID-19), which is an infectious disease caused by a virus of the family Coronaviridae, its transmission occurs in particular by the coronavirus's departure from severe acute respiratory syndrome 2 (SARS-CoV-2) through the upper airways, leading to a direct infection to other people through inhalation or contamination of sites and objects (fomites) that may infect other individuals indirectly, both can be local or community; among the prodromes characteristic of it, severe acute respiratory syndrome (SARS) is in severe form; and due to the global impact and dissemination by many countries, the World Health Organization (WHO) declared it a pandemic (Brasil, 2020; WHO, 2020). Several researches in different areas of knowledge have contributed to the fight against SARS-CoV-2.

Among these researches there is one carried out by Kampf and collaborators (2020) that shows the resistance time of SARS-CoV-2 on some surfaces, and the virus can remain for hours up to days in some materials, which may be present within the hospital environment and therefore the need to train professionals who are on the front lines; the authors also claim that 62-71% alcohol, 0.5% hydrogen peroxide and 0.1% hypochlorite destroy viruses. The COVID-19 pandemic affected approximately 215 countries and territories around the world, infecting millions of people in an asymptomatic, symptomatic, moderate and severe manner, in addition to the occurrence of thousands and thousands of deaths (WHO, 2020). In relation to Brazil, after reporting in the first case in the country, an increase in the number of hospitalizations related to SARS was observed considering the suspected cases for COVID-19 and subsequent confirmation or not through the examination (Ranzani et al, 2021). From this perspective, studies aimed at this new infectious disease are justified due to the pandemic being contemporary by SARS-CoV-2, a virus capable of causing the disease by COVID-19; due to the lack of scientific data and information on the subject; the social and scientific impact that the results can bring and serve as a proposal to be applied in the hospital network, both public, private and philanthropic, as well as the possible occurrence of mutations in the infectious agent.

The central issue to be raised is: how the management of CPE activities in the hospital environment contributes to assist the work process of health professionals through training in order to minimize contamination of objects, common areas and cross-infection among health professionals by SARS-CoV-2 and other patients not positive for the virus. Raising the hypothesis that CPE manages activities/actions/training to update health professionals, through didactic-pedagogical techniques in order to contribute to the improvement of procedures through technical-scientific updates for those collaborated in order to reduce contamination and infection, especially in the face of COVID-19. Thus, the aim of this study aimed to describe the management of the activities of the Permanent Education Center to control SARS-CoV-2 infection in the hospital environment in the face of the COVID-19 pandemic.

## MATERIALS AND METHODS

This is an integrative review had the construction of the guide question assisted by the PICOT strategy (Figure 1) - (P) target population; (I) intervention; (C) comparison or not of the types of intervention; (O) results of interventions; (T) influence of intervention over time (Joaquim et al, 2018; Rodrigues et al, 2020): what has been published about the management of continuing education activities in the face of the SARS-CoV-2 pandemic in the hospital environment?



Figure 1. Diagram of the process of elaboration of the guide question

The articles were selected in January 2021 in the Databases Latin American and Caribbean Literature on Health Sciences (LILACS), *Scientific Electronic Library* (SciELO) and Medical Literature Analysis and Retrieval System Online (MEDLINE).

The descriptors used were continuing education as an alternative term for continuing education; and COVID-19 for Coronavirus infections respectively, according to the classification of Health Sciences Descriptors (DECS). According to the descriptors *Medical Subject Headings* (MeSH): *continuing education*; COVID-19. The Boolean operator used was *continuing education* and COVID-19. The inclusion criteria established were: articles published in 2002 and 2021, in the languages Portuguese, Spanish and English. Articles that were repeated in the databases were excluded; monographs, dissertations and theses; review and reflection articles; editorials; letter to the editor; which were not available in full and did not answer the right question.

After obtaining the articles, they were tabulated in two plans containing the reference (surname of the first author, use of *et al* for above three authors and the year of publication of the article), institutions that the authors are linked, journal and country (Table 1); and the reference, theme addressed, professionals involved and the number of professionals who participated in the activity (Table 2). The level of evidence of the selected publications was determined based on the classification of the Oxford Centre for Evidence-based Medicine.

## RESULTS AND DISCUSSION

After applying the established methodological path, 261 articles were identified for initial analysis, finishing the reading of 5 articles, according to the established criteria, and 80% of the articles were written in English, and one article (20%) in Portuguese. The stages of the methodological process were described in a flowTable (Figure 2).

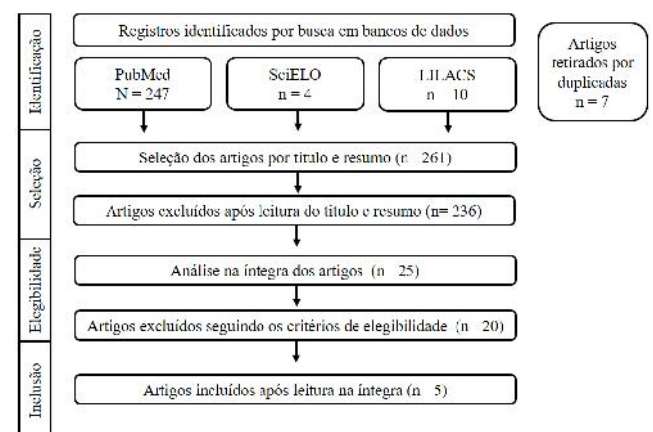


Figure 2. FlowTable of the methodological process steps

After reading the articles selected in full according to the criteria, you filled in two tables by extracting the information proposed for analysis in relation to the origin of the articles, authors, journal, country, topics addressed, target audience and number of participants. All and all were published in 2020 and it was observed that 40% of the published papers occur in the Americas, being one article in South America and another in North America, the most studies had the representation of 20% each in the continents: African, European and Asian. Another point analyzed is the link of the authors' institutions, in 80% of the articles at least one author had the link with some University (Table 1), which suggests the importance of universities in terms of scientific publication and dissemination of actions performed, even in time for a pandemic. In the sum of the studies, a total of 1,146 health professionals, including nurses, physicians, physiotherapists, among others, were included with continuing education activities. 40% of the articles addressed on the use of Personal Protective Equipment (PPE), 20% extended as a theme worked addressing on hand hygiene, and knowledge about virology and epidemiology of COVID-19, another 20% addressed the collection of *swab* in the nasopharynx and 40% did not specify the subject of work with professionals, as shown in Table 2, but reported

Table 1. Origin of selected articles

Reference	Institution	Reveiw	Country
Omoronyia, <i>et al</i> , 2020	Universityof Calabar	PanAfrican Medical Journal	Nigisria
Da Silva, <i>et al</i> , 2020	Hospital Federal de Bonsucesso; Universidade Estácio de Sá; Prefeitura Municipal de Duque de Caxias; Prefeitura do Município do Rio de Janeiro; Corpo de Bombeiro Militar do Estado do Rio de Janeiro; Hospital Estadual Rocha Faria	Enfermagem em Foco	Brazil
Mark, <i>et al</i> , 2020	Rush University Medical Center	Otolaryngology– Head and Neck Surgery	USA
Hodgetts, Claireaux e Naumann, 2020	Royal Army Medical Corps; Royal Center for Defense Medicine	BMJ Mil Health	United Kingdom
Uzzaman, <i>et al</i> , 2020	International Center for Research on Diarreic Diseases; University of Edinburgh; Bangladesh Primary Care Respiratory Society	BMC Family Practice	Bangladesh

Table 2. Continuing education activities and target audience

Reference	Subject addressed	Target audience	Number of trained professionals	Level of evidence
Omoronyia, <i>et al</i> , 2020	Use of PPE *: hand hygiene, knowledge about virology and epidemiology of COVID-19	Health professionals	86	2c
Da Silva, <i>et al</i> , 2020	Paramentação and desparamentação de PPE*	Nurse, nursing assistant, nursing resident, physician and physiotherapist	894	5
Mark, <i>et al</i> , 2020	Nasopharynx swab collection	Nurse, otorhinolaryngologist, emergency technician	64	2c
Hodgetts, Claireaux e Naumann, 2020	Unspecified	Nurses and doctors	52	2c
Uzzaman, <i>et al</i> , 2020	Unspecified	Doctors	50	2c

\*Personal Protective Equipment

that they used online methods. Activity management aims to bring effective and effective results (Kurcgant *et al*, 2009), thus, CPE has the role of contributing to the updating and improvement of health professionals (Flores, Oliveira and Zocche, 2016), especially in the face of the COVID-19 pandemic. Li and other researchers (2020) state that 86% of infections are not diagnosed and that 79% of transmissions occur by asymptomatic people. Thus, it is noted that a range of people are infected and do not know their actual diagnosis and they can contaminate fans that can maintain the presence of the virus for hours and/or even days causing new infections to other people or even reinfection. In this way, the performance of the CPE can contribute to training professionals and aim to reduce the rate of contamination of objectives and infection by SARS-CoV-2 in health professionals. Updating current topics for health professionals for the control of SARS-CoV-2 infection such as hand hygiene, paramentation and disparamentation of PPE, safe collection of nasopharynx *swab* and other subjects are necessary to assist suspected or confirmed cases of COVID-19 (Hodgetts, Claireaux and Naumann, 2020; Mark, *et al*, 2020; Omoronyia, *et al*, 2020; Da Silva, *et al*, 2020; Uzzaman, *et al*, 2020). These trainings can occur through different methods, but it should be analyzed which is better used by the professionals who participated. Thus, it is noted that understanding public policies that directly and indirectly involve the health care of people in the health-disease process, in this case continuing education and related to COVID-19, as well as analyzing the logistics of materials, supplies (such as PPE) and medicines for health maintenance aim to ensure the monitoring of health surveillance, in addition to better organization and management of health systems to ensure a good work process for frontline professionals in the hospital environment (Paim; Teixeira, 2006; Oliveira; Musetti, 2014; Lana, *et al*, 2020).

## FINAL CONSIDERATIONS

It is considered that there are few studies showing the reality of the entire process of management of permanent education focused on actions against SARS-CoV-2 infection in hospital environments during the COVID-19 pandemic around the world. It is noteworthy that health professionals need training, whether and virtual, by simulation, theoretical and/or other methods to update protocols of clinical management of patients, training of procedures and other

practices; it is also shown the fundamental performance that universities have in the work process of health services.

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