Original Article

Coping with the COVID-19 pandemic addressed in Brazilian federal public universities

Enfrentamento da pandemia de COVID-19 retratado nas Universidades Públicas Federais do Brasil

Enfrentamiento de la pandemia de COVID-19 reflejado en las universidades públicas nacionales de Brasil

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Abstract

Objective: The present study aimed to identify the health measures adopted by federal public universities in the context of the COVID-19 pandemic.

Methods: This is a qualitative-quantitative, exploratory and descriptive research carried out through documental analysis of protocols, guidelines, ordinances and booklets made in the federal university scope of Brazil. As for the inclusion criteria, documents must be available on the website of each federal university during the collection period and free consultation of the collection on the internet. The collection period was from March 2020 to November 2021.

Results: We found 51 documents. Northeastern and southeastern universities were responsible for 46.4% of the total publications of federal universities in Brazil.

Conclusion: Considering the measures adopted by Higher Education Federal Institutions, the congruence in trying to establish standardized routines and procedures that were able to manage and minimize the spread of COVID-19 within the university was noticeable.

Resumo

Objetivo: O presente estudo teve como objetivo identificar as medidas sanitárias adotadas pelas universidades públicas federais no contexto da pandemia da COVID-19.

Métodos: Trata-se de uma pesquisa quali-quantitativa, exploratória e descritiva feita por meio da análise documental dos protocolos, diretrizes, portarias e cartilhas confeccionadas no âmbito universitário federal do Brasil. Quanto aos critérios de inclusão foram o documento estar disponível no *site de cada* universidade federal no período da coleta e a livre consulta do acervo pela internet. O período de coleta foi de março de 2020 a novembro de 2021.

Resultados: Foram encontrados 51 documentos. As universidades do Nordeste e Sudeste foram responsáveis por 46,4% das publicações totais das universidades federais do Brasil.

Conclusão: Diante das medidas adotadas pelas Instituições Federais de Ensino Superior, foi perceptível a congruência em tentar estabelecer rotinas e procedimentos padronizados que fossem capazes de controlar e minimizar a disseminação da COVID-19 dentro da universidade.

Resumen

Objetivo: El presente estudio tuvo como objetivo identificar las medidas sanitarias adoptadas por las universidades públicas nacionales en el contexto de la pandemia de COVID-19.

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Conflicts of interest: nothing to declare.

Métodos: Se trata de un estudio cuali-cuantitativo, exploratorio y descriptivo, realizado mediante el análisis documental de los protocolos, directrices, resoluciones y cartillas confeccionadas en el contexto universitario nacional de Brasil. Los criterios de inclusión fueron la disponibilidad del documento en el sitio web de cada universidad nacional en el período de la recopilación y la libre consulta del acervo por internet. El período de recopilación fue de marzo de 2020 a noviembre de 2021.

Resultados: Se encontraron 51 documentos. Las universidades del nordeste y del sudeste fueron responsables por el 46,4 % de las publicaciones totales de las universidades nacionales de Brasil.

Conclusión: Ante las medidas adoptadas por las instituciones nacionales de educación superior, se percibió congruencia para intentar establecer rutinas y procedimientos estandarizados que fueran capaces de controlar y minimizar la diseminación de COVID-19 dentro de la universidad.

Introduction

The identification of the new coronavirus (SARS-CoV-2) in the city of Wuhan (China) in 2019 caused a global concern, with the World Health Organization (WHO) declaring a pandemic situation. As an outcome, in 2020, the Ministry of Health declared community transmission of the new coronavirus, adopting non-pharmacological measures, such as social distancing and isolation. Thus, health measures are defined as technical measures aimed at preventing, minimizing and containing the causes of illness and death, including improving the population's health conditions and well-being.[1]

To guide the closing and/or reopening of institutions, three main axes are highlighted in its document: knowledge about COVID-19 transmission and severity in the target audience; the epidemiological situation of the specific region; and institutions' capacity to maintain disease prevention and management measures. Since then, these measures have been implemented in the routine of universities, based on SARS-CoV-2 transmission.[1]

In this perspective, in Brazil Higher Education Institutions (HEIs) took an active and significant part, facing the need to develop and apply actions and strategies applicable to each region and state. HEIs needed to be able to mobilize resources for investments in critical areas in the fight against the virus and, consequently, for the return and maintenance of their teaching, research and extension activities. These measures include the suspension of classes at all school levels.[2]

With the extension of the pandemic, there was a need to extend the periods of quarantine, precipitating the adoption of health measures inside and outside educational institutions in order to minimize contagion risks. In this context, the Ministry of Education (MEC) organized general guidelines for the return of school activities. Each HEI had to develop its contingency plan to prevent and reduce the effects of the new coronavirus on the university community as well as on the general population.[3-5]

Given this, the guiding question of this study was: What were the health measures adopted by Brazilian federal universities? Thus, this study aimed to identify the health measures adopted by Higher Education Federal Institutions in the context of the COVID-19 pandemic.

Methods

This is a qualitative-quantitative, exploratory, descriptive research carried out through documentary analysis of documents made and shared by federal public universities in Brazil, or also called Higher Education Federal Institutions (HEFI), in this article.

Initially, we carried out a survey on the HEFI websites, from March 2020 to November 2021. The time frame chosen is due to the beginning of the COVID-19 pandemic in Brazil, according to the WHO. Subsequently, we processed a pre-analysis of the documents found, having as an inclusion criterion all documents (booklets, protocols, ordinances, among others) available on the websites of federal universities in Brazil, whose collection consultation was free on the internet.[6]

The universities were divided according to the five Brazilian macro-regions in the North, Northeast, Midwest, South and Southeast. To organize the data, a Microsoft Excel® spreadsheet was created with the following indicators for variables: there is/there is no document; document type; year and month of publication; university name; referred target audience; mentioned topics; and link to access the document.

In the analysis of these documents, we adopted thematic content analysis and its steps,[7] highlighting the meanings emerging in the material in line with the research objectives and theoretical foundations.

Results

In Brazil, there are 69 HEFI, divided by macro-regions: eight (8; 11.6%) in the Midwest; twenty (20; 29.0%) Northeast region; eleven (11; 15.9%) in the North; nineteen (19; 27.5%) in the Southeast; and eleven (11; 15.9%) in the South. We found 51 documents on health measures that aim to reduce and stop the spread of SARS-CoV-2 on the HEFI virtual page. The types of documents were predominantly published in the format and denomination of protocols (21; 41.2%), activity/contingency plans (9; 17.6%), manuals (3; 7.8%), measures and guidelines (3; 7.8%), resolutions (2; 5.8%), ordinances (2; 5.8%), educational notebook (1; 2%), e-book (1; 2%), guidelines (1; 2%), guides (1; 2%), good practices (1; 2%) and standard operating procedure (SOP) (1; 2%).

Table 1. Number of universities by macro-region and respective documents

Macro-region	Number of universities	Number of document publication
North	11	9
Northeast	20	15
Midwest	8	6
South	11	6
Southeast	19	17

Regarding the documents identified (Table 1), 100% (51) of them addressed general aspects of care in relation to COVID-19, including hand hygiene and/or disinfection, mask use and social distancing, ranging from one meter and 50 centimeters (1.5 m) to two meters (2 m). Given the survey, it can be seen that northeastern and southeastern universities were responsible for 46.4% of the total publications of HEFI in Brazil. On the other hand, midwestern universities had 8.7% of the publications, with the lowest rate. It is noteworthy that this region, at the national level, has the lowest number of federal universities. The majority (58; 85.1%) of universities published the documents by November 2020. The others (11; 14.9%) published their documents between December 2020 and March 2021. It was noted that this last group, the minority, was distributed as follows in the regions: 37.5% in the Northeast, 25% in the South, 25% in the Midwest and 12.5% in the North. Only two HEFI did not have publications on health measures against COVID-19 until the end of the virtual search, one in the South and the other in the Midwest. With an exploratory focus on complementing social media, a search was carried out on HEFI's media addresses, and it was observed that five of them (7.24%) shared posts, alerting students and employees about the publication of these documents. There is no recorded evidence that they have been informed by emails or by the institution's own platform. As for class duration, in 17 documents (24.6%) it is foreseen between four and five hours of class, with no interval forecast. It is worth mentioning that at the time of data collection, SARS-CoV-2 vaccination was already being carried out, however, no recommendations were found regarding the immunization of university students and employees. It was also verified in relation to health measures that the documents implemented by the universities promote their recommendations observing the age group, individuals' clinical characteristics and symptoms. The recommended health measures to be taken in the presence or absence of symptoms and depending on the risk category in which individuals fall are represented in Chart 1.

Chart 1. Health measures adopted by HEFI for students and professionals according to the characteristics for the risk of contracting/transmitting COVID-19

Individuals' characteristics	Recommended measures/actions
Having symptoms of COVID-19, or even a family member has symptoms	Not going to the institution Undergoing RT-PCR Keeping the institution informed
Individuals over 60 years of age and/or with chronic diseases or disabilities	Checking the risk/benefit Follow the institution's protocol
Individuals with nonspecific symptoms	Not going to the institution Undergoing RT-PCR Keeping the institution informed
Individuals with no symptoms	Checking temperature at the entrance of the institution Wearing a mask in all environments

Discussion

To better organize the discussion of the findings, two lines of approaches were organized, namely: recommendations from federal public universities and return of the academic community to activities.

The documents pointed out as health measures the form of coronavirus transmission, measures for prevention and management, such as the use of masks at all times in the university environment, hand hygiene with soap and water and/or use of antiseptic (alcohol gel), not sharing objects, cleaning surfaces before and after use with 70% liquid alcohol, in addition to maintaining natural ventilation, with doors and windows open, citing as a basis the WHO recommendations[8]

Social distancing was another health measure adopted. The identified documents mention distance as one of the main measures for SARS-CoV-2 management, ranging from one to two meters of interpersonal distance. A booklet makes recommendations regarding the use of public and private transport (Uber, Taxi, carpooling) for the flow to and from the HEFI.[9]

Recommendations from federal public universities

Differences in the speed of the spread of COVID-19 are visible between cities, regions and countries, and it is affected by some factors such as effective public policies, cultural and behavioral aspects, health conditions, sanitation and hygiene issues, timing of the beginning of the pandemic; political context, among others.[8,10,11]

Urban mobility is a factor to be assessed. In the capitals of Brazil, the population with more resources, in general, makes captive use of individual transport, even living in central areas, where there is better infrastructure and public transport services. The most vulnerable population, which has greater dependence on collective and active transport models, is not served effectively.[12-15]

Therefore, it is necessary that HEFI keep an attentive and investigative look towards the academic community that uses public transport, developing strategies to recognize this public and implement actions based on prevention and management measures, aiming at leaving until the individual arrives at the university, the possibilities of contagion and the spread of the coronavirus on the way, in addition to the travel time to carry out their activities.[16]

Under another approach, the monitoring of signs and symptoms such as cough and fever was also instituted to control the movement of people in HEFI. However, no document identified highlights the modus operandi of monitoring and tracking students, professors, technical-administrative or outsourced workers who circulate through the institution and at some point present a positive test for the coronavirus. This situation is identified as a failure in the development of documents for violating the WHO recommendation on viral management.

In contrast, some countries, such as Germany and the Netherlands, present, in their protocols, the university community supervision by a previously trained employee (security, cleaning assistant), so that hygiene measures are carried out correctly and there is no spread, not only of SARS-CoV-2 as well as other viruses within educational institutions. It is noteworthy that in Switzerland the protocols recommend two hours within the institution without interval between classes, reducing contact and possible agglomerations between individuals.[17,18]

The adaptation of infrastructure to university environments is also a challenge, not only organizational, but financial, hindering infrastructure actions. This adaptation includes changes to drinking fountains, establishment of gel alcohol dispensers, use of thermometers, liquid alcohol sprayers, information boards posted throughout the university, as well as in the departments and social spaces (panties, restaurants, sports venues). These actions are indicated in protocols, manuals and e-books, with the exception of guidelines and ordinances, which inform the basic measures for transmissibility prevention and management.

The current moment is permeated by an economic crisis aggravated by the pandemic scenario, covering HEFI, which have already been suffering a reduction in resources since 2019 with a significant budget drop. This reduction, associated with blockages and "freezing" of funds, brings difficulties and

challenges to keep universities in full operation and support students in situations of economic vulnerability. The current budget will have an impact not only on the reduction of students, but also on the development of research, science and technology, compromising the future of HEFI.

The return of the academic community to activities

Universities mobilized to face the pandemic and acted on four major fronts: social actions (educational activities, internet or on-site service, food distribution, diagnostics, development of applications and portals); research activities; production and manufacture of materials and equipment (70% alcohol production, masks, maintenance of hospital equipment); and infrastructure of universities made available to the external community.[19]

The question of "What will be the return of classes?" and "When will this return be?" since its interruption remained surrounded by fears and dilemmas especially regarding vaccination. Private universities anticipated announcing and making the return in the online modality, but there were no answers for HEFI students, making predictions about the future of health and education difficult.[20]

In 2020, more than ten vaccines were under test in Brazil. While there was not a wide vaccination coverage of the population, the best health actions to prevent and manage the coronavirus were social distancing, mask use, and hand, surface and object hygiene. However, the measures need not only actions by the health sector, but social policies that guarantee income, employment and continuity of service activities and policies for the dissipation of scientific information in a way that reaches the population as a whole.[21-23]

Social restrictions, such as public health measures, help reduce the rate of COVID-19 transmission, but there are negative health effects related to this restriction, which can be medium to long-term. One of the main impact factors of quarantine is due to the sudden change in people's daily routine, influencing lifestyle. An inadequate lifestyle can lead to the appearance of dyslipidemias, insulin resistance, hypertension, obesity, cardiovascular diseases, which are associated with the clinical worsening of COVID-19.[24]

The academic routine taken on by students at HEIs can influence behavioral changes related to health. Therefore, during the coronavirus pandemic, the population's behavior is a worrying factor, which must be assessed and monitored by universities. A study carried out in Portugal showed high levels of depression, anxiety and stress during the pandemic, when compared to regular periods of this same population, suggesting a negative impact on the psychological of these students as a result of the SARS-CoV-2 pandemic.[25,26]

The documents analyzed do not mention outpatient care, teleservice or psychological assistance for students, and there are no actions and strategies for monitoring and/or promoting student health, just to control the virus. Students used to the routine of study and work, or even freshmen, who dream of experiences and opportunities within HEIs, have their expectations frustrated and consequent impacts on their health.

With the implementation of emergency remote teaching (ERT), students needed support materials, electronic devices and access to a quality digital network to monitor activities. HEFI sought to apply inclusion measures so that students could have access to classes. Actions such as loaning notebooks and smartphones, distributing scholarships to pay for the internet and creating environments with computers so that these students could attend university classes were implemented. It is noteworthy that these rooms were made available by prior scheduling, and to enter the university building it was mandatory to follow the health measures.

It should be noted that online teaching should not be seen as an enemy of face-to-face teaching, as learning is not just conveying knowledge; the teaching-learning process involves mental connections established between student and professor, creating interaction with the environment. In this regard, online teaching is presented as an ally in education, but it was offered in an intensified way, without the prior preparation of professors.[27]

Another caveat is that ERT does not replace the specifics of face-to-face teaching, nor has distance

learning (DL) been established as a way of conceiving education in times of pandemic. For establishing online teaching models in Brazil, It is necessary to invest in technology equipment, development of programs and applications that guarantee quality education to all, made available in an equitable way, without the possibility of exclusion, as occurred in this pandemic, and it is necessary to expand this debate between sectors.[27]

In addition to the aforementioned vulnerabilities, the closure of HEIs interrupted other services such as food. Given the data, protocol, manual and e-book collection, the university restaurant (RU) operation or food distribution to students who need this service was not mentioned. A protocol from a university in southeastern Brazil mentioned the cleaning and circulation of individuals in the University Student House (CEU - *Casa do Estudante Universitário*). Actions as an impediment to returning to CEU of undergraduates who returned to their cities were established. It is noteworthy that this protocol was developed in November 2020, that is, before the start of SARS-CoV-2 vaccination.[4]

In early 2021, with the development of multiple vaccines with proven efficacy and safety, the main challenge related to the COVID-19 response was ensuring the immunization of the entire community. Throughout history, scheduled and organized vaccination practices have avoided million deaths and controlled the evolution of several diseases. Thus, HEIs are preparing, once again, to adapt health protocols and to publicize the importance and effectiveness of vaccines in the midst of denialism and ideological conflicts.[28]

Conclusion

The data presented were intended to contribute to the debate on health measures in HEFI, the incorporation of health strategies that favor the continuity of academic activities, linked to personal benefit, as proposed by health promotion, following as a challenge to be better explored by educational institutions. Considering the measures adopted by HEFI, it was noticeable to try to establish standardized routines and procedures that were able to manage and minimize the spread of COVID-19 within the university, having its activities initially paralyzed. From the data of this research, it is clear the need to modernize the technology parks of HEFI, since technologies for a new post-pandemic teaching model already exist, with the need for integration between the State and public universities aiming at the continuity of teaching, research and extension. Education, health, social relations and politics will not be the same as before, as the new paradigms call for a differentiated look at the community.

Collaborations

Moraes, JV, Khalaf DK, Freire MHS, Macedo LC, Strapasson S and Mendonca RC collaborated with the project design, writing, relevant critical review of the intellectual content and approval of the final version of the article.

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