Original Article

EDUCAÇÃO E INFORMAÇÃO EM SAÚDE: INICIATIVAS DOS NÚCLEOS DE TELESSAÚDE PARA O ENFRENTAMENTO DA COVID-19

HEALTH EDUCATION AND INFORMATION: INITIATIVES OF TELEHEALTH CENTERS TO COMBAT COVID-19

EDUCACIÓN E INFORMACIÓN SANITARIA: INICIATIVAS DE CENTROS DE TELESALUD PARA HACER FRENTE AL COVID-19

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RESUMO

Objetivo: Identificar as iniciativas de teleducação e informações em saúde direcionadas ao enfrentamento da pandemia da COVID-19 oferecidas pelos Núcleos Estaduais de Telessaúde vinculados ao Programa Telessaúde Brasil Redes. **Método**: Estudo exploratório, transversal, de abordagem quali-quantitativa, na forma de casos múltiplos, usando informações disponíveis nos sítios eletrônicos e mídias sociais. **Resultados**: Informações e iniciativas de tele-educação voltadas à COVID-19 estavam presentes em 15 dos 23 Núcleos existentes. Verificou-se produção de amplo leque de materiais diversos, que incluem cursos a distância, webpalestras, webaulas, cartilhas, infográficos e outros materiais informativos. Destaca-se a existência de forte tendência das ações de teleducação com foco nas redes sociais (*YouTube*, *Facebook*, *Twitter* e *Instagram*), como coadjuvantes na divulgação de produtos e serviços para a população, fortalecendo a democratização e o acesso a informações úteis para usuários, enfermeiros e profissionais dos serviços de saúde. **Conclusão**: Acesso à informação de forma ágil e transparente, durante o isolamento social é crítico no enfrentamento da pandemia. A *web* revela-se como importante ferramenta para obter informações sobre a COVID nos Núcleos de Telessaúde. Os resultados mostram papel relevante a ser exercido pelos serviços de telessaúde, considerando a necessidade de qualificação profissional e de acesso à informação de qualidade demandada pela pandemia.
Descritores: Telemedicina; Infecções por Coronavirus; Mídias Sociais; Acesso à Informação.

ABSTRACT

Objective: To identify the health education and information initiatives aimed at coping with the COVID-19 pandemic, offered by state Telehealth Centers associated with the Brazilian Telehealth Network Program. **Method**: This is an exploratory, cross-sectional study with a qualitative and quantitative approach, in the form of multiple case study, using information available on websites and social media. **Results**: COVID-19-related Information and tele-education initiatives were present in 15 of the 23 existing Centers. The production of a wide range of different materials was verified, including online courses, web lectures, manuals, infographics, and other informational material. It is worth mentioning the existence of a strong trend in tele-education actions focused on social networks (YouTube, Facebook, Twitter, and Instagram) as assistants in the disclosure of products and services to the population, strengthening democratization and access to useful information for users, nurses and health service professionals. **Conclusions**: Access to information in a fast and transparent way during social isolation is critical in facing the pandemic. The websites are an important tool to obtain information about COVID-19 on Telehealth Centers. The results show an important role to be played by telehealth services, considering the need for professional qualification and access to quality information required by the pandemic.
Key Words: Telemedicine; Coronavirus Infections; Social Media; Access to Information.

RESUMEN

Objetivo: Identificar las iniciativas de teleducación e información de salud destinadas a hacer frente a la pandemia de SARS-CoV-2 ofrecidas por los Centros estaduales de Telesalud vinculados al "Programa Telessaúde Brasil Redes". **Método:** Estudio exploratorio, transversal, con enfoque cuali-cuantitativo, en forma de casos múltiples, con base en sus páginas web. **Resultados:** Las iniciativas de información y teleducación dirigidas al nuevo coronavirus estuvieron presentes en 15 centros. Se verificó la producción de una amplia gama de materiales diferentes, incluidos cursos a distancia, conferencias web, folletos, infografías y otros materiales informativos. Se destaca la existencia de una fuerte tendencia en acciones de teleducación centradas en redes sociales (YouTube, Facebook, Twitter e Instagram), como asistentes en la difusión de servicios a la población, fortaleciendo la democratización y el acceso a informaciones útiles para usuarios, enfermeros y profesionales de salud. **Conclusión:** El acceso a la información ágil y transparente durante el aislamiento social es crítico para enfrentar la pandemia. La web se revela como una herramienta importante para obtener información sobre SARS-CoV-2 en estos centros. Los resultados muestran un papel relevante de los servicios de telesalud, considerando la necesidad de calificación profesional y el acceso a la información de calidad requerida por la pandemia.
Descriptores: Telemedicina; Infecciones por Coronavirus; Medios de Comunicación Sociales; Acceso a la Información.

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INTRODUCTION

At the turn of 2020, the world was surprised by a new disease, COVID-19, which quickly became a pandemic of significant proportions and with very relevant negative impacts on health and the economy. Its etiologic agent, the SARS CoV-2 virus, was identified on the Asian continent, in late December 2019. On March 11, 2020, the disease had such a geographical spread that it was characterized by the World Health Organization (WHO) as a pandemic[1].

Figures related to COVID-19 point to a global health emergency. According to WHO data, as of August 1, 2020, there were 17,396,943 confirmed cases worldwide, with 675,060 deaths[2]. On the same date, Brazil had 2,610,102 cases and 91,263 fatal victims[2], which makes the country one of the epicenters of the disease, even more considering that there is substantial underreporting of cases and deaths.

As it is a new virus and a nosological condition that did not exist before, knowledge about the disease has gradually built up, making it a challenge to control its spread and minimize its negative impacts on the health of the population and the workers of essential and assistance services. Medical recommendations and scientific evidence are underway around the world and many efforts have been made, internationally and in Brazil, to support the population, health professionals and managers for its adequate coping. This becomes even more relevant because, to date, there is no effective therapy or vaccine against the virus, with the control of COVID-19 relying heavily on extensive measures of isolation, quarantine and restriction of social contact. These actions are fundamental for a slowdown in the spread of the epidemic (flattening of the transmission curve), protecting those with a higher risk of severe conditions against infection and reducing the peak need for medical assistance[3]. Equally important is the use of preventive measures, such as the use of masks, personal protective equipment and strict attention to personal hygiene and environmental care[4].

Amid the avalanche of reports on the spread of the virus and its impacts in terms of cases and deaths, there is also the recognition that Telehealth can play a critical role in the global response[5]. Telehealth can guarantee and expand access to health care and actions, through remote service between service providers and users, through Information and Communication Technologies (ICT). It allows interaction between different health professionals, as well as remote access to educational, clinical and diagnostic support resources[6].

Its use in the epidemic would serve for remote screening, care and treatment, helping prevention, surveillance, detection and monitoring, and also contributing to mitigate impacts on health care indirectly related to COVID-19[7]. Its usefulness, however, is not limited to activities of a strictly assistance nature. Effective, quality and reliable communication is critical during health emergencies such as the outbreak of COVID-19. Official communication plans should promote ease and diverse channels to inform people about the pandemic, avoid rumors, and reduce iatrogenesis and threats to public health. Social media platforms are beneficial for modeling disease trends and for monitoring the evolution of patients' symptoms or the public's reaction to the pandemic over time [8].

In Brazil, a country of continental dimensions and with profound regional differences, Telemedicine actions began in the 1990s, following the worldwide trend in medical care and the generation of distance reports, enhanced by the bidirectional video and audio resource. Subsequently, the use of ICT was extended to support training and health information services and activities for multidisciplinary healthcare providers and patients, configuring a broader field called Telehealth[7].

Among the initiatives implemented in the country's public agenda, the Telemedicine University Network (RUTE) and the Telehealth Brazil Network Program stand out. Coordinated by the National Education and Research Network (RNP), RUTE was established in 2006 with the main objective of improving infrastructure of the communication and interinstitutional collaboration between university hospitals and health institutions[9]. The implementation of the Telehealth Brazil Network Program began in 2007, with the objective of strengthening and improving the quality of primary care in the Unified Health System (SUS). It was initially implemented as a pilot project - Telehealth Brazil Program - in nine states: Amazonas, Ceará, Pernambuco, Rio de Janeiro, Minas Gerais, Goiás, São Paulo, Santa Catarina, and Rio Grande do Sul[9]. It was redefined and expanded by means of the Ordinance number 2,546 of the Ministry of Health (MOH), published on October 27, 2011[10], renaming it the Telehealth

Brazil Network Program. Currently, it consists of State Centers, present in almost all units of the federation, in addition to Intermunicipal and Regional Centers. This Program aims to integrate teaching and service, through ICT, to improve the quality of care, through permanent education activities and the provision of assistance support, through the Telehealth Centers (TC)[11].

The TC are responsible for the management and coordination of Telehealth actions, offers and services, such as Tele-consulting (consultation between health workers, professionals and managers, using bidirectional telecommunication instruments), Tele-diagnosis (oriented to the doctor-patient relationship in function of the diagnosis of conditions or diseases, done at a distance), Second Opinion Formative (asynchronous tele-consulting on current doubts of health professionals, which are answered and then validated by specialists, followed by the dissemination in the Virtual Health Library), and Tele-education. These diverse modalities have Primary Health Care (PHC) as the focus of action for the qualification and strengthening of the workforce, especially the multidisciplinary family health teams, favoring their interaction with other levels of care and strengthening the Networks Health Care System of the SUS[10].

Tele-education is a modality instituted in a significant way in Telehealth actions in the country, with the aim of qualifying different health workers and guiding the population. In 2017, it was offered in 24 of the 47 instituted state and inter-municipal Telehealth Centers. It contributes to potentiate permanent education programs, enabling the development of health professionals with a critical attitude, committed to the quality of care and more sensitive to changes in care practices and the organization of work processes[10,12]. To this end, tele-education uses a wide range of educational actions (conferences, web classes, lectures, courses, discussion forums, chats, among others) mediated by ICTs, which can strengthen health care in SUS [10,12].

This study is part of a research project entitled "Telehealth services evaluation model (MAST): adaptation and validation for the Brazilian context", whose proposal is to develop an evaluation model that contributes to the expansion of follow-up, monitoring strategies and evaluation of Telehealth actions in SUS. One of the stages of the project involved the mapping of Telehealth applications offered by Telehealth Centers in Brazil and, during its realization, the

emergence of the COVID-19 pandemic offered an opportunity to redirect the efforts of researchers, in order to observe the initiatives of information and health education, mediated by internet tools and ICT to contribute to coping with the new disease.

As it is a new virus and disease on the world stage, the need to produce and disseminate knowledge about COVID-19 to SUS workers and to the population is revealed to be absolutely essential. Tele-education is configured as a tool for the construction and improvement of this knowledge, being able to promote access to quality information, supported by evidence and produced by official bodies of national and world reference. In view of the current situation, it becomes relevant to give visibility and to highlight tele-education actions and practices, considering them as a strategic component to cope the pandemic still in progress.

Thus, in this article, the objective was to identify and systematize the initiatives of education and dissemination of health information aimed at coping with the pandemic by COVID-19 produced by the Telehealth Centers linked to the Telehealth Brazil Network Program.

METHODS

This is an exploratory, cross-sectional study with qualitative and quantitative approach, which used the method of multiple case study. Studies of this type allow the use of several methodological approaches in a complementary way and investigate, empirically, a contemporary phenomenon within its real life context[13]. In the form of multiple cases, it adds the advantage of a more comprehensive exploration and with the possibility of comparison, an important aspect, considering the diversity of Telehealth services present in the country.

The multiple case study was guided by the following question: What kind of health education and information initiatives are being used by Telehealth Centers to educate the population and qualify professionals working in the context of the pandemic? Following theoretical and methodological recommendations[13], the study was developed, observing four basic steps: (1) study planning; (2) data collection; (3) individual case description, and (4) data analysis and systematization.

In the first stage, the State Telehealth Centers that are part of the Brazil Telehealth Networks Program were defined as the cases to be

analyzed. The option to focus on the State Centers was based on the assumption that, as they represent the largest instance in terms of the units of the federation, they would have greater conditions, in terms of structure and human resources, to organize themselves and respond more promptly to the needs and urgency dictated by the expanding epidemic. In addition, all these Centers have tele-education as one of their central activities, due to this requirement standardized by MOH Ordinance 2,546 of 2011. Norms also define that tele-education activities must be registered on online platforms, where it is possible to register users and establishments using these services[14].

All State Centers belonging to the Telehealth Brazil Network Program were identified based on the provisions of the Ministry of Health's website, which lists the respective electronic addresses[11]. The survey of information and initiatives disclosed as tele-education actions was carried out, accessing the Centers' websites and their official social networks (Facebook: https://pt-br.facebook.com/pg/facebook/about/; YouTube: https://www.youtube.com/intl/pt-PT/about/; Instagram: https://about.instagram.com/pt-br/about-us; Twitter: https://about.twitter.com/pt.html).

The production of information and health education content about COVID-19 was considered as the unit of analysis of the study, based on the tele-education activities contained at the time of data collection and the direct observation technique was applied[13] of the TC websites and social media. This observation technique is useful when "it is a matter of observing events in real time" (13: 108), being considered opportune for the study carried out.

Data collection was carried out intensively, on May 18 and 19, 2020. With the effort of collecting in a short interval, the objective was to bring actions that, due to their nature and characteristics, are added in a very dynamic and almost continuous manner in time.

A collection form was built in a spreadsheet in the Excel® software, containing the variables of interest: name of the TC; link to the TC page on the internet; hotsite page link; links on social media pages; educational actions; podcasts; infographics; booklets; manuals, protocols and technical notes; epidemiological bulletins; audiovisual content available on YouTube and other media, with their respective themes; web conferences; educational materials for the population; mobile apps and games. The provision of this standardized instrument[13] ensured that information was collected on the web in a systematic, fast way and by six different researchers.

The individual description of the cases carried out in the third stage included the export of the information collected by each researcher, individually and independently, to the data spreadsheet. At the end of the collection, the researchers held meetings via videoconference system of the National Teaching and Research Network (RNP) and checked for any informational gaps and inaccuracies, which were subject to re-verification by a different researcher than the one who had carried out the collection. After this review, all information was consolidated into a single spreadsheet, forming a database with the evidence found.

In the fourth and last stage of the study, the analysis by Explanation Construction was performed, one of the "analytical possibilities recommended for multiple case studies"[13: 131]. The objective of this approach was to enable the elaboration of an explanation of a phenomenon through the descriptive analysis of the observed variables, considering establishing similarities and particularities related to the phenomenon[13]. The explanation was elaborated in a narrative way, and the discussion of the contents was complemented based on the references present in the literature on the topic. Finally, the results were presented with the aid of tables and graphs to systematize the presentation of the information collected, in order to give visibility to the TC initiatives on the theme of COVID-19, in view of its potential usefulness for health professionals, mainly nurses, managers of SUS services and population.

The four steps performed in carrying out the work are summarized, graphically, in Figure 1, below.

Figure 1 - Steps for collecting and systematizing information and educational activities relating to COVID-19 present on the sites of the State Centers linked to the Telehealth Brazil Network Program.
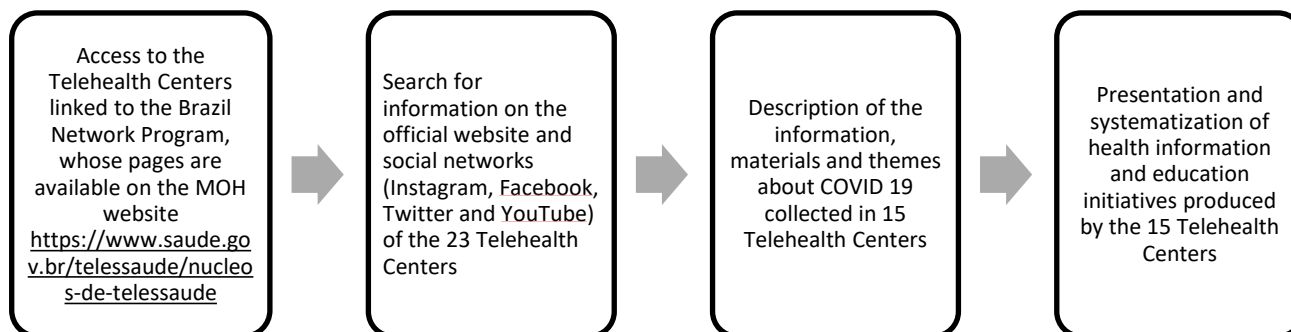
Source: Research data, 2020.

The investigation did not require prior review by the Ethics Committee, as it did not involve direct research with human beings and used only public sources of secondary data and online access.

RESULTS AND DISCUSSION

The State Telehealth Centers of the Telehealth Brazil Network Program are present in 23 states: Acre, Alagoas, Amazonas, Bahia, Ceará, Espírito Santo, Goiás, Maranhão, Minas Gerais, Mato Grosso, Mato Grosso do Sul, Pará, Paraná, Paraíba, Pernambuco, Rio de Janeiro, Rio Grande do Norte, Rio Grande do Sul, Roraima, Santa Catarina, São Paulo, Sergipe and Tocantins.

All State TC have official pages. In principle, this existence would favor the transparency and publicity of the initiatives, promoting access to information and health education products. However, it was not possible to access the pages of the TC in Paraná, Paraíba and Tocantins. Pages of the first two were, systematically, offline in repeated attempts, even after the end of the data collection period; the Tocantins page requires registration and password to access the information, which is unfavorable to its broad access.

However, not all TC with accessible pages had, however, information and tele-education initiatives focused on the theme of COVID-19, at the time of the research, as was the case with five Centers: Alagoas, Pará, Roraima, Santa Catarina and Ceará. These last two had their activities suspended at the time of data collection. Thus, data collection was done in 15 TC.

Of these, seven (47%) corresponded to the first nine Centers, initially implemented by the Telehealth Brazil Network Program, where due to the longevity and consolidation, it was expected to facilitate the initiation of the investigated actions. In Centers of Bahia, Acre, Espírito Santo, Mato Grosso, Mato Grosso do Sul, Sergipe, Rio Grande do Norte and Maranhão, the presence of information and health education initiatives on COVID-19 was also identified (Box 1).

Box 1 - Summary of information and health education initiatives on COVID-19, produced and disseminated on the websites of the State Telehealth Centers of the Telehealth Brazil Network Program, on May 18 and 19, 2020.

Telehealth Center	COVID-19 tele-education initiatives	Page address*
TC Acre	Tele-orientation through the "Dial Coronavirus"; web classes	http://www.telessaude.ac.gov.br/
TC Amazonas	Webpage dedicated to the Coronavirus; newsletters; MOH videos; PHC protocol; updating courses in distance education for professionals	https://telessaudeam.org.br/COVID-19/

Telehealth Center	COVID-19 tele-education initiatives	Page address*
TC Bahia	Webpage dedicated to the Coronavirus; epidemiological bulletins; protocols; technical notes and contingency plan for Bahia; frequently asked questions; doubts space and guidance on Fake News; newsletters; web lectures; web classes; dissemination of training courses; podcast; primers and educational materials for PHC	http://www.saude.ba.gov.br/temasdesaude/coronavirus/
TC Espírito Santo	Web lectures	https://telessaude.ifes.edu.br/
TC Goiás	Webpage dedicated to the Coronavirus; newsletters; common questions; web classes	https://covid19.medicina.ufg.br/
TC Maranhão	Web lectures; seminars and chatbot	http://telessaude.huufma.br/portal/
TC Minas Gerais	Webpage dedicated to the Coronavirus (hotsite); information for professionals and the citizen; videos; infographics; questions and answers; protocols for PHC and emergency services; Mobile apps; Games; articles; epidemiological bulletin; newsletters; text library; useful links	https://www.telessaudemg.net/
TC Mato Grosso	Webclasses.	http://www.telessaude.mt.gov.br/
TC Mato Grosso do Sul	Webpage dedicated to the Coronavirus on the sites; newsletters; web classes; web lectures; Contingency plan; technical notes; protocols for PHC; MOH manuals and documents	http://telessaude.saude.ms.gov.br/portal/2020/03/covid-19/
TC Pernambuco	Webpage dedicated to the Coronavirus; information for health professionals and the citizen; mobile applications; epidemiological bulletin; technical notes and web lectures	http://telessaude.pe.gov.br/corona/info
TC Rio de Janeiro	Educational materials; protocols and manuals for health professionals; training courses in distance education; podcasts; chatbot; questions and answers; materials for the population; Webinars	http://www.telessaude.uerj.br/teleeducacao/course/view.php?id=127
TC Rio Grande do Norte	Training courses; web conferences	http://www.telessaude.ufrn.br/
TC Rio Grande do Sul	Webpage dedicated to the Coronavirus; common questions; manuals; protocols for PHC; Coronavirus panel and educational materials	https://www.ufrgs.br/telessauders/
TC Sergipe	Web lectures; it provides mobile application for access to virtual assistance and guidance of doctors	https://telessaude.se.gov.br/
TC São Paulo*	Common questions; SOF; direct link to access the São Paulo city hall page where it is possible to have access to technical documents; epidemiological bulletins; technical notes; legislation; recommendations; MOH and ANVISA manuals; guidelines on Fake News and dissemination of training courses	https://telessaude.prefeitura.sp.gov.br/ https://www.prefeitura.sp.gov.br/cidade/secretarias/saude/vigilancia_em_saude/doencas_e_agravos/index.php?p=291766

Source: Research data, 2020 from information collected on the websites of the State Telehealth Centers on May 18 and 19, 2020.
Note*: The São Paulo Nucleus is called Telehealth Networks in the Municipality of São Paulo.
Legend: PHC- Primary Health Care, SOF- Second Formative Opinion, MOH- Ministry of Health, Distance Education- TC, Telehealth Center, ANVISA- National Health Surveillance Agency.

During the period of the COVID-19 pandemic, Telehealth had its use expanded in Brazil[7]. During this period, the country was mobilized to cope it with the implementation of laws and regulations that emphasized the importance of Telehealth in this scenario, mainly in the scope of tele-assistance[15-16]. Teleconsultation without a previous visit, previously only allowed by the Federal Council of Medicine sin exceptional cases, stands out as an innovation not present in the national context. In this sense, MOH Ordinance 467, of March 23, 2020, authorizes its practice - on an exceptional basis - in actions that include pre-clinical care,

assistance support, consultation, monitoring and diagnosis, within the scope of SUS, supplementary and private health (Art. 2)[15].

Telehealth has favored tele-education activities, allowing mixing scientific knowledge with empirical knowledge, providing a critical view and greater participation, and improving access to educational strategies and materials. The ICT-mediated health information and education initiatives produced by the TC deserve relevance in the context of the pandemic. The existence of diversified materials for nurses and other health professionals, audiovisual resources, applications and hotsites[17], among other initiatives, has been

used to structure and disseminate health information about COVID-19.

In seven TC (Minas Gerais, Pernambuco, Goiás, Amazonas, Bahia, Rio Grande do Sul, and Mato Grosso do Sul), visual rearrangements appeared to have occurred on their websites, with the TC's entry page showing specific areas dedicated to the coronavirus , where emphasis was given to information content related to the theme of COVID-19. The presence of vibrant colors from hotsites (sites created temporarily to disseminate information about services and campaigns), and images linked to the coronavirus work, moreover, as strategies to draw the attention of those who access the sites in search of the information produced on the topic[17].

The production of audiovisual educational material proved to be quite intensive and diffused by the TC, including web lectures, webinars, web classes, courses, seminars and infographic materials, which can be accessed by those interested. Topics covered in this set of educational initiatives were extremely diverse, including, from information on signs and symptoms of COVID-19; interpretation of tests for the diagnosis of the disease; preventive measures such as hand hygiene, use of masks and personal protective equipment, even specific care related to mental health and prenatal care; violence against the elderly; health of women, the black population and children and adolescents; attention to the indigenous population and patients with rare diseases, all in the context of the ongoing pandemic.

Much of this production was directed to health professionals, consistent with the commitment of the Telehealth Brazil Network Program, as a strategy of continuing education. It is reiterated that such actions must be thought and offered in the perspective of a larger project, which considers the demands and needs of the teams, permanently encouraging the identification of problems in the work context, the expansion of knowledge applied to the local space, the interdisciplinary work and the role of teams in decision making[12]. At the same time, initiatives that sought to inform the population for its autonomy and self-care were identified, such as the production of booklets, infographics and other materials, such as specific resources directed to children and pregnant women present on the Rio de Janeiro TC page. Thus, the social role of this work is reinforced, mediated by ICTs, as these tools already established for professional

education came to be used more widely for health education in society[18].

Other documents such as a guide of practices and conduct, newsletters, clinical manuals, protocols and epidemiological bulletins were also important sources of information to instrumentalize and assist professionals in the care, clinical management, organization of the assistance flow, notification, among other actions necessary to cope the pandemic. In this sense, it was observed that the availability of these documents potentially helps to disseminate and guide for the different levels of care within the health system, and can contribute to the improvement of care. Materials produced are open access, can be redeemed by download and shared, free of charge, on TC sites.

Several TC, such as, for example, Rio Grande do Sul, had specific sections of frequently asked questions, where people seek to address practical issues that professionals need to handle, in these pandemic times, such as the applicability of diagnostic tests for COVID-19, investigation of COVID-19 after death in suspected cases, filling in the death certificate in suspected or confirmed cases of coronavirus, guidance on dental care in PHC, in the context of the epidemic, among others, with scientific references that allow for further deepening of the interested professional.

Electronic data panels, made available on the internet by some State TC, contributed to the dissemination of updated epidemiological information on the numbers of suspected, confirmed, recovered and deaths related to the disease, often presenting the spatial distributions by the municipalities or health regions of the states. The dissemination of this constant monitoring through ICT is also a reality in other isolated institutions, bringing daily and sometimes real-time data on confirmed and suspected cases of COVID-19, deaths, ICU admissions and patients on mechanical ventilation[7].

The audio resource, by means of a podcast, is a device used by the TC of Amazonas, Rio de Janeiro and Bahia to transmit information and facilitate access, as the material can be accessed via the internet by cell phone and be accessible to the visually impaired. Podcasts provide greater integration with the public and topics covered by this modality included: "Most common doubts about the Covid-19 pandemic", "Mental health in times of pandemic", "How to fight fake news by searching for reliable information", "Post-

pandemic effects on different social groups" and "Tests and vaccines against Covid-19".

Among the digital initiatives found, in this survey, mention should be made of a game about COVID-19 produced by the TC of Minas Gerais, presenting educational content on prevention and contamination that allow the population to acquire scientifically supported knowledge in a reliable manner and, at the same time, fun and stimulating. The objective of the game is to promote changes in attitude that reduce the transmission of the new coronavirus. This contribution to society is an extension action of the Faculty of Medicine at UFMG, which provides access to the game in several digital formats: computer, tablet, smartphones and, even, on simpler mobile devices to facilitate access. The use of game design elements in non-game contexts is a strategy pointed out in studies as a means of increasing the initialization and retention of the desired health behaviors, stimulating the involvement of the participants and facilitating their learning about health[19].

Another initiative presented in the multiple resources made available by the TC refers to specific content aimed at children, who are forced to remain in prison and away from school activities, during social isolation. The TC of Rio de Janeiro, for example, presents material prepared in simple and direct language, meeting the specific needs of children and containing simple play activities, such as coloring and word search, which helps assist parents and educators in dealing with the theme. Similar strategies have been developed by other institutional actors, such as the Oswaldo Cruz Foundation (Fiocruz) initiative, which already has ten "Quarantine booklets" available on its website, where not only information about the disease and its prevention is provided, but also other family support as suggestions for activities to be developed with the little ones, such as: recipes, games, quiz and others[20].

Telephone communication gained prominence in times of social isolation, because interactivity in a continuous and instantaneous way, through chat, chatbot (programs that simulate a conversation, such as those established between human beings, can be used for the most diverse purposes, including for health area[17,21], and the WhatsApp messaging application [https://web.whatsapp.com/] as resources aimed at monitoring patients, guiding health professionals and the population about health

care. The use of these tools was observed in nine of the 15 TC (Acre, Bahia, Goiás, Maranhão, Minas Gerais, Pernambuco, Rio de Janeiro, Sergipe, and São Paulo).

With the scenario imposed by the pandemic, the use of WhatsApp has been potentiated as a communication tool. It is frequently used by nurses and other health professionals to disseminate health information, exchange information and make clinical decisions among professionals; it also provides social support to patients during treatment and disseminate health guidelines[22]. To avoid leaks and exposure, the communication platform between healthcare professionals and patients' needs an adequate technological infrastructure with digital security, respecting the General Law for the Protection of Personal Data, in order to guarantee the privacy of patient's data and the confidentiality of information exchanged in the tele-consultation. However, it is worth noting that the registration performed in this messaging and calling application does not replace the registration of this information in the patient's medical record, be it electronic or printed.

Internationally, the telephone was already used in telemedicine to monitor health risks. Currently, its applicability has intensified, due to the severity of the disease and the need for social distance imposed by COVID-19. However, it is necessary to take into account the ethical and legal regulations for consultations and information provided by telephone and video. In this sense, it is necessary to consider the organization of clinical monitoring and the next stages of care[22].

Social media sites have emerged as popular sources of health information, especially for teenagers and young adults, for the advantages of low cost, fast transmission, through a broad community and user interaction. On the official pages of the 15 TC, icons are found that redirect to social networks such as Instagram, Twitter, YouTube, and Facebook. The Facebook icon was present in all of them.

These social networks are coadjuvant the process of disseminating the activities produced and, often, there is duplicity of information in these environments, which tend to increase the reach of the propagation of the treated content. They are used by the TC both to publicize the initiatives and disseminate the informational content produced by the Centers, as well as to facilitate contact with those interested in the

activities offered. The use of these resources, through different platforms, can contribute to the strengthening and expansion of the sharing of health information. However, certainly, the effectiveness of this use in the described scenarios involves, above all, the appropriation of these resources by the population as part of its daily communicational life. If everyone already uses applications and social networks to talk to his family and friends, it is natural to extend its use for professional communication[18].

Thus, within the context of information and communication based on evidence, it is necessary to problematize the quality of health information conveyed by social networks. One of the phenomena that has gained ascendancy today, and not only related to the coronavirus and the pandemic, is Fake News. These are defined as false news, with no scientific evidence and conveyed as truth in the written press and social media[23].

In order to combat this practice, content was created in the TC with questions and answers, as well as spaces for clarifying doubts, to combat false news about COVID-19. These initiatives strengthen health information to be valid and reliable, as well as to be safely disseminated. Still in this line of action, there are government efforts to combat false news. The Ministry of Health, for example, opened a channel of communication with the population through WhatsApp— (61) 99289-4640 and, in addition, it has health professionals in the technical areas to confirm whether the news is true or false. The same is true of several state health departments, including some to which the TC are linked. In this sense, the additional availability of the spaces mentioned above by the TC, as well as the dissemination of materials such as guidelines and technical information on their pages and social media, has been added to government initiatives, strengthening the fight against the transmission of false information, which only confuses professionals and the population in general and can have very damaging effects to achieve the adequate fight against the epidemic and its effects.

It was noticed that the TC disseminate health education content, in several formats and that the main means of dissemination is done through YouTube. With more than 2 billion users, YouTube is a media channel, which millions of people turn to for information. In this sense, it is important to consider that the content made available by the TC, in this channel, allows reaching many individuals, with sharing and comments, being resources allowed by this social network, which increases the visibility and reach of the information. In a sample of 100 most viewed videos on YouTube about coronavirus in January 2020, researchers identified that they were watched more than 125 million times and by March they had already recorded more than 165 million views[24].

Of the fifteen Centers, fourteen provided videos of web lectures, web conferences and web classes on topics related to coronavirus, which can be accessed by both professionals and the general population. The similarity and recurrence of the content produced by the TC allowed the grouping of information in Figure 2.

Figure 2 - Themes present in the educational content about COVID-19 published by the Telehealth Centers of the Telehealth Brazil Network Program on their channels in YouTube, on May 18th and 19th, 2020.
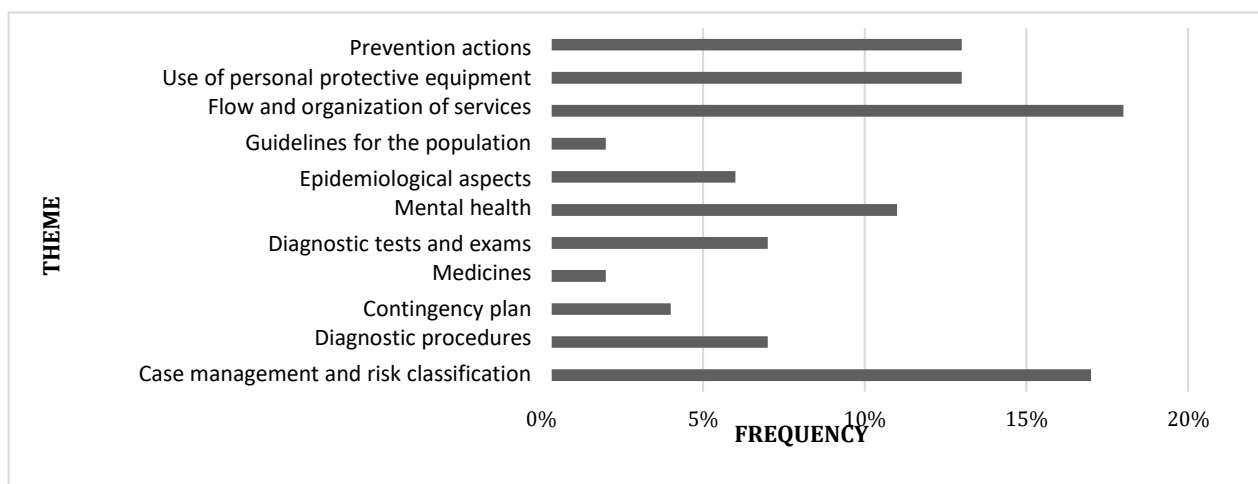
Source: Research data, 2020.

Regarding the themes, it is observed that a large part of the contents of the videos of web classes and web lectures directed to professionals focus on aspects of the attire and unattire of Personal Protective Equipment (PPE) and in the clinical management and risk classification of patients. They are extremely timely and relevant content, considering the large number of infected nurses and health professionals, since the beginning of the pandemic in the country, many of whom lost their lives in the fight against COVID-19, and the scarcity of structural resources, in terms of diagnostic tests, beds and human resources, constantly present in all regions of Brazil.

Thematic, addressing disease prevention actions were found in 13 TC. It is known that adequate personal protection and hygiene behaviors are the best way to prevent disease transmission and COVID-19[24]. Therefore, the content of the videos on care in the home environment, hand hygiene and other hygiene habits are of great relevance to mitigate the spread of this viral infection. Such recommendations presented in videos can be a useful alternative to offer information to the public with a low literacy level[24].

The variety of information on COVID-19 produced by some TC covered a wide range of issues, emphasizing that the topics addressed were always focused on specific care related to the pandemic, as can be seen in Box 2.

Box 2 - Thematic content brought in the videos made available by the Telehealth Centers of the Telehealth Brazil Network Program, on their YouTube channels, on May 18th and 19th, 2020.

Telehealth Center	Thematic content of videos on health care in times of pandemic
Acre	Prenatal, childbirth and postpartum care; newborn care; nutrition; orthothanasia and dysthanasia
Amazonas	Gestation; cancer and its handling in the epidemic; breast-feeding
Bahia	Nutrition and immune system; health care for elderly people; dental care
Espírito Santo	Radiological evaluation of suspected patients or those with the disease; viral conjunctivitis
Goiás	Nutrition and care in food purchases
Minas Gerais	Respiratory syndromes associated with COVID-19; flu syndrome; flu syndrome vs. severe acute respiratory syndrome
Maranhão	Elderly's health; positive schedule for children, severe acute respiratory syndrome
Mato Grosso do Sul	Women victims of violence; adequate food and nutrition; psychosocial network; attention to maternal and child health
Mato Grosso	Pregnancy and childbirth care; dental treatment; physical therapy; self-care; breastfeeding; integrative and complementary practices; guidance for Community Health Agents during home visits; respiratory syndromes; recommendations for Primary Health Care; particularities in child health care, palliative care
Pernambuco	Post mortem care; care in the prison system
Rio de Janeiro	Post mortem care
Rio Grande do Norte	Elderly's health; pandemic care; coping science
São Paulo	Protocols for Mobile Emergency Service; care for cardiac arrest patients; protocols for COVID-19
Sergipe	Humanized Assistance during COVID-19: Prenatal, Childbirth, Birth and Puerperium; Prison System: surveillance, management and flow of care; breastfeeding; social isolation; sample quality control for COVID-19 testing

Source: Research data, 2020.
Note*: In Rio Grande do Sul, the YouTube channel did not have videos about COVID-19 at the time of the survey. On Instagram, the Center brought a statement on the preparation of educational videos that would be made available on official websites and networks soon for the entire population.

All information, content and guidance on COVID-19 are of public utility. Thus, virtual environments, media and social networks such as Facebook, WhatsApp, Instagram and YouTube favor the dissemination of information. These networks are used by a considerable portion of the population and are designed as strategies to optimize and favor people's access to such content[24]. Although the media are a powerful educational tool that nurses and other health professionals can mobilize to disseminate information and influence public behavior, if used inappropriately, they can simultaneously be a source of misleading information. A study by Li et.al.,[25], examining 69 videos related to the epidemic by COVID-19 (totaling 257,804,146 views), shows that 27.4% of the most viewed videos on YouTube contained misleading or erroneous information, which were the subject of more than 62 million views worldwide.

Finally, some limitations of the present study deserve to be mentioned. Among them, we

highlight the short time frame of the survey carried out vis-à-vis the rapid production and updating of information about the disease, a dynamic and almost continuous process. The objective was to draw a portrait, exploratory and necessarily restricted, of how these activities have been developed in the State TC of the Telehealth Brazil Network Program. It is noteworthy, however that new content and other initiatives aimed at promoting health in times of pandemic may have been made available in the TC after data collection for this manuscript. The lack of an active link or the requirement of a password-mediated procedure for access did not allow verifying the object of interest in question in three Centers (Tocantins, Paraná and Paraíba). In addition, the research was restricted to State TC; health information initiatives and educational activities related to COVID-19 were not researched in municipal and private Centers, or in other institutional actors in the Telehealth area, such as RUTE and the Open University of SUS. Thus, the results presented do not represent the totality of information and activities with the potential to be produced and disseminated using this modality of tele-education in the course of the pandemic. Finally, the vast majority of TC pages do not have a visible record of the number of accesses, or of the type of audience (health professionals, managers, citizens) that seeks information, which is certainly an interesting aspect to be analyzed.

In addition to the limitations, it is emphasized that all initiatives produced by the TC in times of pandemic reinforce the need to ensure connectivity and infrastructure, as a way of optimizing the information and educational content available. Without connectivity and infrastructure, the simple presence in the Centers does not guarantee the population's access to health information or the articulation between services, nurses and other health professionals, who are always important and, even more so, in these pandemic times.

FINAL CONSIDERATIONS

The production of secure information, in an agile and transparent way, aiming to equip health professionals and strengthen the population's autonomy for self-care, is a relevant initiative that the Telehealth Centers in Brazil have been developing to face the COVID-19 pandemic. There was a significant effort by the Telehealth Centers to produce and disseminate knowledge and materials, among other health information and

education resources about COVID-19, which are essential to act in the context of many doubts and uncertainties about the disease. In this way, initiatives produced by the TC show an attempt to facilitate the access of nurses and health professionals to such production, which certainly add to other efforts to qualify these workers.

The pandemic scenario - whose duration is still unknown but is expected to be long - requires continuous strategies and commitment from all. During the research, it was found that the use of ICTs for the production, dissemination and democratization of information and health education related to this theme has been consolidated and continues, advancing with the help of digital tools. It was identified that the initiatives operated by the Nuclei in the different territories of the country can give greater visibility and impulse the dissemination of health promotion and professional training actions, which can be replicated and/or readapted according to local needs.

Considering such potential, it is expected that health information mediated by ICT will stimulate and strengthen the use of Telehealth in Brazil, and be a source of studies and initiatives in the post-pandemic, to meet the demand for health professionals and the population.

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