Telehealth physical therapy during the COVID-19 pandemic: an experience description

Telessaúde na atenção fisioterapêutica durante a pandemia de COVID-19: um relato de experiência

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Abstract

Introduction: The actions and measures taken to mitigate the coronavirus pandemic significantly affected physiotherapy practice. Several initiatives were undertaken after the Federal Council of Physiotherapy and Occupational Therapy approved remote care. Thus, we aimed to identify, analyze, and discuss barriers, facilitators, and perceived challenges of telehealth physical therapy during the pandemic by describing an experience. **Report description:** The interruption of weekly face-to-face consultations led to remote care strategies using asynchronous methods, in the form of phone calls (health education), and a synchronous approach via video calls formats (mind-body practices without a pre-established frequency in the public service and twice weekly in the private sector). The type of personal device determined the health care delivery. The facilitators were interpersonal relationships, patient profile, type of personal device and previous experience with mind-body practices. The barriers were low education level, access to internet and type of connection. Challenges were restriction or absence of therapeutic touch and eye gaze, which are characteristic of the profession. **Conclusion:** Despite its significant potential for the continuity and longitudinality of health care and development of social networks, telehealth depends on technological resources and, as such, tends to be exclusive due to the inequities in Brazil. Additionally, telehealth has relevant repercussions for physical therapy practice, especially therapeutic touch and eye gaze, which are soft skills inherent to the profession.

Keywords: COVID-19. Pandemics. Physical therapy. Primary health care. Telehealth.

Resumo

Introdução: *As ações e medidas tomadas para mitigação da pandemia por coronavírus afetaram expressivamente a atuação do profissional fisioterapeuta. A partir da resolução do Conselho Federal de Fisioterapia e Terapia Ocupacional, que aprovou o atendimento remoto, inúmeras iniciativas foram empreendidas.* ***Objetivo:*** *Identificar, analisar e discutir barreiras, facilitadores e desafios da telessaúde na atenção fisioterapêutica durante a pandemia.* ***Descrição do relato:*** *A interrupção dos atendimentos presenciais levou ao desenvolvimento de estratégias de telessaúde através de chamada telefônica ou videochamada, em ações assíncronas (educação em saúde) e síncronas (práticas corporais sem frequência pré-estabelecida no setor público e duas vezes por semana no privado). O tipo de dispositivo determinou a modalidade de atendimento. Os facilitadores foram: relações interpessoais, perfil do paciente, tipo de dispositivo e experiência anterior de práticas corporais. As barreiras foram: baixa escolaridade, tipo e qualidade do acesso à internet. Os desafios foram a restrição de olhar e toque característicos da profissão.* ***Conclusão:*** *Embora com potencial expressivo de longitudinalidade do cuidado e formação de redes de apoio, o teleatendimento é dependente de recursos tecnológicos, sendo excludente diante das iniquidades do país. O teleatendimento traz relevantes repercussões na atenção fisioterapêutica ao interferir diretamente nas tecnologias leves da profissão.*

Palavras-chave: *COVID-19. Pandemias. Fisioterapia. Atenção primária à saúde. Telessaúde.*

Introduction

Brazil recorded more than 686,000 deaths and 34.7 million confirmed cases of COVID-19 by September 29, 2022.[1] Pandemic mitigation and suppression measures were initiated due to the high number of asymptomatic cases, rapid transmission and ineffective vertical isolation, including insufficient knowledge about the disease, social inequities and unsuccessful public health measures.[2,3]

On the verge of recurrent collapses in health services, the strategic action known as "Brasil Conta Comigo" (Brazil counts on me),[4,5] was implemented to support human resource planning to combat the pandemic in the three spheres of government, including training, and temporary hiring of physiotherapists. Nonetheless, the media praised the care provided to the infected patients, which reinforced know-how paradoxes, specialized hospital care and high technology dependence in precarious working conditions to the detriment of other levels of physical therapy care. Approximately 36 million cases recovered,[1] but symptoms such as fatigue and dyspnea, among other sequelae, may persist.[6] Despite immunization, variants led to new waves of the disease simultaneously with the demand for post-COVID-19 care. As the rate of recovery increased, there was greater media attention on the role of physiotherapy in post-COVID-19 rehabilitation. In this respect, COVID-19 enhanced the understanding of a physiotherapist's skills and abilities a priori in a hospital setting, mainly through vacancies created due to the lack of qualified professionals and high demand, and a posteriori in post-COVID-19 rehabilitation.

Despite the need for COVID-19 care, the pandemic led to a call to action for telehealth, which can protect health professionals and patients without interrupting treatment.[7-10] The Federal Council of Physical Therapy and Occupational Therapy (COFFITO)[11] endorses praxis in other care levels under different scenarios (Table 1). Given the substantial prevalence of chronic conditions and risk factors for cardiovascular disease in Brazil,[12] strategies are needed to avoid exacerbating chronic disease, prevent injuries and reduce functional damage due to mobility restrictions and decreased physical activity. Other care needs emerged when imaginary demand involving centralized procedure-based health production was disrupted,[13] that is, care production based on associations between user satisfaction and procedures, such as prescribing exams and medication instead of translating the subjects' real desires and needs into care. In 2020, Google searches for "exercise at home", "pain relief" and "reduce stress" increased by up to 800%. Previous studies have suggested solutions to these problems.[9,10]

The pandemic triggered the need to discuss the social role of physiotherapists and the barriers, facilitators and challenges of professional practice, especially in primary care telehealth. Reflecting on changes in scenarios, challenges faced, and the particularities of care is key to understanding unrestricted practice in more complex care, which has already been widely discussed.

Table 1 - Remote care modalities[11]

Modality	Definition
Teleconsultation	Clinical consultation registered and carried out by the physiotherapist or occupational therapist at a distance.
Telemonitoring	Distance monitoring of a patient who was previously seen in person using technological devices. The professional can use synchronous and asynchronous methods, and decide on the need for face-to-face reassessment meetings whenever necessary, which can also be conducted by another professional after mutual agreement.
Teleconsultation	Communication registered and carried out between professionals, managers, and other health care stakeholders based on clinical and scientific evidence and protocols made available by the Ministry of Health and the State and Municipal Health Departments, in order to clarify doubts about clinical procedures, health-related measures and workflow issues.
Synchronous	Any remote communication carried out in real time.
Asynchronous	Any remote communication not carried out in real time.

The pandemic prompted us to rethink care strategies for users, patients, and workers during social isolation, including the use of technological resources for home office guidance, self-care in all age groups through health education, integrative and complementary therapies (ICTs) and an active and healthy lifestyle at home and/or in confined spaces. As such, this report aims to present experiences that were summarized and analyzed based on the dialog between two physiotherapists who implemented telehealth initiatives. In order to report these experiences, we emphasized perceived telehealth barriers, facilitators, and challenges for physiotherapists during the pandemic. .

Description of the experience

Prior to the pandemic, the consultations were carried out weekly at a private facility (personalized mind-body practices) and parish hall (collective mind-body practices based on collaboration between the university and BHU). At the onset of the pandemic, mitigation measures were implemented, users and patients informed about the interruption of face-to-face consultations, and WhatsApp groups created. Social isolation and sanitary recommendations were sent, including how to make protective masks, as well as dates and locations of the COVID-19 blitz for rapid testing.

Given the impossibility of continuing in-person care, "Voice Touch" and "Virtual Embrace" (private and public sectors, respectively) were developed to rethink healthcare and ensure its continuity. Ten former physiotherapists agreed to work as volunteers in the "Virtual Embrace" initiative. In regard to "Voice Touch", only one physiotherapist was responsible for consultations. The experiences occurred in Santos, Sao Paulo state, between April and July 2020. The activities were described, systematized and analyzed by the two physiotherapists in charge of the initiatives (Tables 2 and 3). For better understanding, a timeline of these experiences was created (Figure 1).

Since it is a report of an experience, we did not require informed consent. However, both physiotherapists and patients were previously consulted and agreed with the description and dissemination of this experience report. No data that would identify the subjects were disclosed, in compliance with the recommendations of Resolution no. 466/1212 of the National Health Council, which governs the CEP/CONEP System (integrated by the National Commission of Ethics in Research (CONEP/CNS/MS) and Research Ethics Committes.[14] It should be noted that the authors were responsible for the content of this report, which does not necessarily represent the opinions of the other physiotherapists or patients involved.

This report emerged from the dialog between authors seeking mutual support and coping strategies to face and overcome the interruption of in-person healthcare delivery, and ensure continuity of care. Since discussion about professional practice in the field is essential, the authors shared experiences during this period. The decision to describe facilitators, barriers and challenges was made to optimize field contributions, which differ from experimental research (even when considering the clinical environment, which was replaced with the users' home during the pandemic) due to a more complex and dynamic scenario influenced by external factors and others that may facilitate or compromise care delivery.

Table 2 - Characteristics of telehealth experiences in physiotherapy developed during the pandemic

	Virtual Embrace	**Voice Touch**
Local	Santos (Sao Paulo)	Santos (Sao Paulo)
Sector	Public	Private
Participants' profile	Elderly women (retired/pensioners) with mild disabilities **Total:** 16 **Adherence:** ≅ 65% (four users were contacted only once)	Young adults and middle-aged subjects (home office) Elderly subjects of both sexes (retired) **Total: 11** **Adherence:** ≅ 50% (without follow-up losses during the experiment)
Purpose	Continuity and longitudinality of care	Longitudinality of care and to address spontaneous demands
Professionals involved	A physiotherapist and ten former physiotherapists	A former physiotherapist who was also responsible for the initiative
Consultation via	Phone call or via WhatsApp	Video call via Hangouts/WhatsApp
Frequency	Non-established frequency, carried out according to the availability of those involved and resources	YouTube playlist: daily posts Teleconsultation**: 2x/week (45-90 minutes)
Actions taken		
Asynchronous (Health education)	March 30 to July 7: Official Brazilian Ministry of Health materials sent; Influenza vaccination campaign reports and rapid tests; Home stretching recommendations; Manufacture of cloth face masks.	March 30 onwards: Official Brazilian Ministry of Health materials sent; YouTube video with mind-body practices instruction (functional therapy/Pilates/yoga/self-massage) and self-care (pain, preparation, and application of hot and cold compresses); Individualized unsupervised practice (text/PDF file).
Synchronous	March 30 to July 7: Telemonitoring* (individual care with self-report of health condition and functioning, followed by instruction on home--based and unsupervised exercises).	June 4 onwards: Teleconsultation** (individual or group care with conversation circles followed by supervised exercise and self-care orientation, including home-based and unsupervised exercises).

Note: *Long-distance monitoring of a patient previously seen in person using technological devices. The physiotherapist or occupational therapist can use synchronous or asynchronous methods, and decide on the need for face-to-face reassessment meetings, whenever necessary, which can also be done by another local physiotherapist or occupational therapist by mutual agreement. **Clinical consultation registered and carried out by the physiotherapist or occupational therapist remotely.

Table 3 - Facilitators, barriers and challenges perceived in the physiotherapy-based telehealth experiences during the pandemic

	Virtual Embrace	**Voice Touch**
Facilitators	Longitudinal bond; interpersonal relationship; previous telemonitoring experience; former students from the university.	Longitudinal bond; practice rituals at start and end of consultations; patient profile; digital literacy/fluency; possession of personal device with internet access; previous mind-body practices experience; video calls.
Barriers	Distinct bonds formed between therapists and users; long distance calls; low education level; restricted digital literacy; absence of broadband internet and/or restricted data packages; absence of collective exchange/support/ fraternization spaces.	Prejudice against remote health care; connection quality; limitations/failures of synchronous tools.
Challenges	Absence of touch and eye gaze; harm reduction to the risks of exposure to COVID-19 restricted to group participants, not including family members; high number of unaccompanied users.	Absence of touch; organization of space-time for mind-body practices; creativity to adapt practices.

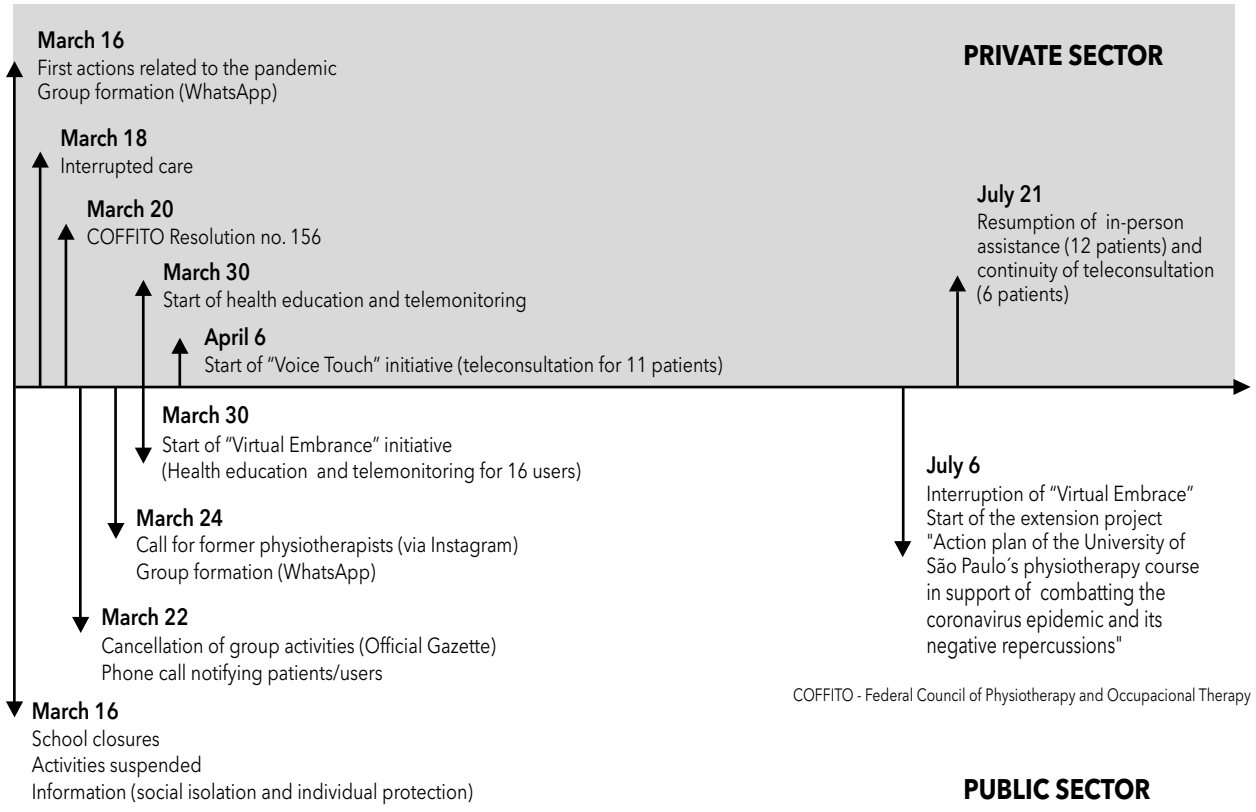

Figure 1 - Timeline of events related to telehealth initiatives.

Voice Touch

Before the pandemic, twice-weekly 45-60 minute consultations based on individualized mind-body practices were conducted in a private facility with a group of up to four patients/clients. The number of patients treated ranged from 20 to 36 adults with mild disabilities and chronic pain recruited via spontaneous demand or medical referral.

Only eleven patients participated in "Voice Touch", two abandoned the initiative, three were unable to participate (lack of familiarity with digital technologies, needing help to perform the tasks and case complexity), four were unable to combine the activities with their new home routine (children staying at home, changes in working hours, etc.) and one cited financial reasons.

The initiative was carried out synchronously by twice weekly video calls, consisting of a conversation circle (sharing emotions, perceptions, and health needs) followed by mind-body practices and ending with suggestions for leisure-time activities at home, home office and self-care instruction, including unsupervised home-based exercises (Table 2). Mind-body practices were performed individually or collectively, including breathing exercises and body awareness followed by balance, mobility, strengthening and stretching exercises involving yoga, Pilates, functional and kinesiotherapy, relaxation, and meditation (Table 2). The main materials used were mats, pillows, bath or face towels, blankets, food packaging, elastic bands and small balls, mailed to each patient.

Virtual Embrace

"Meninas do Morro" (Girls from the Hill) was a therapeutic group consisting of 24 clinically stable individuals, mostly women over 60 years with mild disabilities. Approximately 12 women performed weekly mind-body practices in the parish hall, including balance circuits, global stretching and ICTs.

Only 16 of the 24 users were contacted. Although most were retired or pensioners, two were still working

(caregiver and business owner), which required discussing these cases with the Basic Health Unit (BHU) team and the provision of protective masks. Ten of the 16 participants lived with family members who continued to work during the pandemic, and two of the physiotherapists abandoned the project due to difficulty in contacting the users, despite several attempts.

The initiative was developed and conducted by the physiotherapist responsible for the "Meninas do Morro" group. Telemonitoring was proposed according to guiding principles, as follows: maintaining bonds, qualified listening and reducing functional damage due to social mobility restrictions. Given that care was provided via telephone calls, eight participants received a guide for home-based and unsupervised exercises (mainly stretching and simple easy-to-perform exercises with low risk of falling, prepared for each participant by the physiotherapist who treated them) via WhatsApp (Table 2). The other participants were individually contacted via telephone for instruction on individual protection measures against COVID-19 and self-reported health condition and functionality (Table 2). Four of the participants were contacted only once due to data package and internet access limitations.

Practical implications: barriers, facilitators, and challenges

After a detailed description of the initiatives (Table 2), the physiotherapists jointly identified and summarized facilitators, barriers and challenges faced during the experience. These aspects are presented in Table 3. Given that the initiatives were carried out on an emergency basis in response to the pandemic, a standardized protocol was not established to implement the services, nor were tools designed to assess their effectiveness. Although the guiding principles were the same, the socioeconomic aspects of the patients determined the activities, mainly in the public sector.

Telehealth contributed to longitudinality in primary care, patient monitoring, compliance with social isolation, health education and the development of supportive networks. Previous studies have demonstrated the role of telehealth in health education, especially in managing chronic conditions and the proper use of medications.[15] In regard to the pandemic, telehealth favored understanding the COVID-19 health-disease process and the relevance of individual and collective measures to mitigate the pandemic, while clarifying fake news and sharing self-care information in terms of physiotherapists' initiatives and spontaneous patient demands. However, telehealth depends on personal device and internet access, but 20% of rural households have no access to the latter.[16] Although 82.7% of households reported using the internet at home, the main reasons for not using it are lack of interest (32.9%), expensive access (26.2%) and no family member knowing how to use it (25.7%).[16] It is essential to discuss telehealth applicability, including considerations about digital exclusion in our country.

In the private sector, video calls facilitated teleconsultation, while phone calls only enabled telemonitoring in the public sector (Table 3). Despite the need to identify and monitor the subjects' health condition, teleconsultation allows real-time interventions, thereby resolving or mitigating functional decline caused by social mobility restrictions. Thus, teleconsultation requires owning a device that can make video calls and an internet connection. Both owning a device and internet quality are socially and digitally exclusive since 5% of households in Brazil do not have a telephone. Additionally, individuals did not own personal devices because of the cost (27.7%), lack of interest (21.9%), not knowing how to use them (21.9%) or using a third-party device (16.4%).[16] Only 38.7% of older adults use the internet, while 79% of retirees and 50% of housewives never access it[17] and almost 60% do not know how,[16] justifying the differences found in this report.

Video calls depend on the type and quality of internet access. In Brazil, 81.2% of individuals have mobile broadband, 77.9% have fixed broadband and 59.2% have both.[16] Moreover, the device determines the use of video calls (poor connection, not having the application installed and/or being unable to use it), which explains the impossibility of carrying out supervised interventions in the public sector.

Difficulty or lack of familiarity with the internet and synchronous tools was a barrier to teleconsultation, but the patients' profile in the private sector (middle class with digital fluency, one or more devices and good internet access) favored better use of synchronous tools. The higher the education level, the greater the daily internet access, which contributed to the success of teleconsultations in the private sector.[17] However, 96% of illiterate subjects, 50% of indigenous, 36% of brown and 41% of black individuals never access the internet, showing how exclusive this care modality can be.[17]

It is important to note the centrality of bonding and light technologies in the experiences, which were considered facilitators in this report. User-centered care implies building " a new reference for users that deconstructs the beliefs held about the procedure (...), valuing primarily the work carried out by health professionals and relational technologies", ensuring integrality of care.[13] Operating with light technologies is not exclusive to the level of care, as described by Negro et al.[18] with respect to video calls between professionals and family members in an intensive care unit (ICU) during the pandemic. For better understanding of health technologies in physiotherapy, we present definitions and examples in Table 4.

Table 4 - Light, light-hard, and hard technologies in physiotherapy

Technology	Key concept	Physiotherapy care
Light	Relational technologies	Promotion of bonds and relationships, empowerment, hospitality through dialog and qualified listening.
Light-hard	Structured knowledge	Specific and technical-scientific knowledge, such as exercise orientation.
Hard	Technological equipment, machines, guidelines, and organizational structures	Use of devices with electrothermal-photophysical resources, such as laser therapy.

The initial resistance of both physiotherapists and patients, especially in the private sector, to telehealth was overcome with an emphasis on light technologies. Treatment continuity strengthened the therapist-patient and service-user bonds. Video calls favored interpatient bonding, leading to supportive networks through the sharing of experiences, perceptions, and emotions during social isolation. In the public sector, the BHU team started telemonitoring their users in April, except those accompanied by the "Virtual Embrace" method. Additionally, involving volunteer graduates broadened perspectives and reduced the BHU team's overload.

Previous experience with mind-body practices facilitated the synchronous activities because it favored the predominance of verbal commands. Although widely used in the private sector, mind-body practices were limited in the public sector, mainly due to the risks of unsupervised practice.[19] Mind-body practices are understood as "manifestations of body culture that contain meaning and should include enjoyable and cultural organization experiences and operate according to humanized care, that is, listening to patients and being aware of their needs and desires",[20] They also contribute to establishing rituals while mitigating the main challenges faced, engaging in dialog, sharing healthcare responsibilities and empowering those involved.

In the private sector, the facilitators contributed to adapting teleconsultation practices, which showed praxis governance "based on commitment to life and expressed in healthcare dimensions, such as the relationship between humanization, bond creation, positive outcomes and greater patient autonomy".[21]

Social isolation increased sedentary behavior while simultaneously decreasing physical activity level.[22] Leisure-time activities at home, and others to earn extra income such as sewing cloth masks, are primarily sedentary. It is worth noting that older women's leisure time depends on mind-body practices provided by health services in collective areas. Living near these facilities minimized the limited spaces inside homes, thereby confirming that "physical activity developed during the time available to individuals reproduces social differences".[23]

The home is related to the specific perceptions and meanings of users/patients, where people may be bedridden or sedentary, thereby posing a challenge. The lack of specific resources to perform activities (i.e., dumbbells or Pilates-based accessories) led to creative adaptations using household objects, demonstrating that mind-body practices do not require special clothing or a specific place, thus dispelling popular notions regarding physical activity and exercise.[23] Understanding the role of the physiotherapist beyond the clinical environment and the user's autonomy to choose the care scenario broke a long-held paradigm, overcoming the limited perception of home-based praxis to care for bedridden or disabled patients.

Physiotherapy practice is largely influenced by gaze and touch. The absence or restriction of gaze prevented the early identification of age-related functional losses, possibly exacerbated by social isolation. Voice commands transmit affection and preserve bonds, as well as providing health education and care guidance. As such, we consider that therapeutic touch and gaze are light technologies in physiotherapy that were substantially affected during the pandemic. In

addition, understanding the impact of user profile on how to promote telehealth (teleconsultation in the private sector vs. telemonitoring in the public sector), as well as the influence of social inequities, broadens the comprehension of the role of digital technologies in health, especially in the complex context of social inequality in Brazil.

Health inequities and disparities

Social isolation and sanitary measures undoubtedly reduced COVID-19 infection.[2,24] However, handwashing relies on basic sanitation policies, and only 53.2% of the population is served by sewage treatment systems and 83.6% have indoor plumbing.[25] It is therefore necessary to consider the health-disease-care process, especially during the pandemic, which has exacerbated social inequalities. Urban poverty areas experienced higher COVID-19 transmission rates, severity and lethality, as well as greater socioeconomic impacts due to inadequate public policies and progressive loss of rights.[25,26] Areas with high housing density, a prevalence of chronic conditions, less access to health services, insufficient sanitation and water supply are inhabited primarily by black informal workers.[26] Despite mutual support and horizontal solidarity measures, more than half of the COVID-19 cases at the onset of the pandemic involved black individuals.[26] The "mass vulnerability" affected mainly the unemployed, freelancers such as Uber drivers, domestic servants and small business employees.[27] In addition, micro-entrepreneurs and self-employed workers faced the dilemma of earning an income while risking contaminating themselves and others.[27]

Staying socially isolated can be seen as a privilege since the aforementioned measures did not equally affect the Brazilian population, especially those that depend on public transportation to earn a living. A country with the territorial dimensions and glaring social inequalities of Brazil posed additional challenges in controlling the pandemic due to regions with low immunization rates´ exhibiting more cases, hospitalizations, and deaths while others peaked and/or declined. This raised the following question: should remote physiotherapy care be a right or a privilege during a pandemic?

Perspectives

The pandemic had repercussions on the praxis and employability of physiotherapists. In Brazil, their social role is closely related to how physiotherapy is perceived by both physiotherapists and patients, whereby modifications in praxis also depend on changes in the understanding of the role of these professionals.[28]

The profile of physiotherapists and teacher-researchers is based on specialties.[28-30] In the media, the image of physiotherapists as essential in high-complexity care sustained the overrating of the specialty. The Regional Council of Physiotherapy and Occupational Therapy of the 3rd region (Crefito-3) implemented "The special inspection of Crefito-3" to ensure biosafety for physiotherapists in hospital settings, while other physiotherapists continued working in other care settings using self-made personal protective equipment (PPE) (cloth masks and face shields made with plastic bottles or projector sheets). Nevertheless, new health demands reinforce the need for "polyvalent professionals who are unique, sensitive and able to perceive different human needs, encouraging patients to produce their own movements, thereby maintaining or acquiring autonomy".[31] Despite being historically linked to rehabilitation, physiotherapy in health promotion is related to changes in professional training, understanding health as complex, expanded, multidetermined and context-sensitive, with functionality and autonomy as the object of praxis.[32]

During the pandemic, the use of ICTs stood out mainly in self-care. Crefito-3 published a booklet on ICTs and self-care for post-COVID-19 patients. In addition to being contradictory, health education on ICTs is still in the early stages, prioritizing the technique instead of focusing on the principles.[33]

Despite the fact that national curriculum guidelines for health professions recommend curriculum and professional profile changes,[31] reorienting practice requires considering how the profession is portrayed in the media, rethinking not only the academic discourse about specialties, but also the healthcare study design, in addition to producing health education focused on comprehensive care, light technologies, and telehealth.

Conclusion

COVID-19 affected ways of living and caring as well as socioeconomic, environmental, and political dimensions, giving a new meaning to the knowledge and practices of physiotherapists. Despite its significant potential for longitudinal health care and the development of

a supportive social network, telehealth depends on technological resources and may be exclusive for some individuals due to the social inequalities existing in our country that were exacerbated by the pandemic. Additionally, telehealth has important repercussions for physiotherapy care by directly interfering with soft skills inherent to the profession and restricting care possibilities, especially in the absence of visual cues recognized through professional gaze.

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Authors' contributions

TLVDPO and FFC contributed equally to the conceptualization, methodology, analysis, data interpretation, and writing the original draft. All the authors approved the final version. Volunteer physiotherapists and patients agreed with the disclosure of this experience report. The content of this report is solely and exclusively the responsibility of the authors (TLVDPO and FFC) and does not necessarily represent the opinions of other physiotherapists or patients.

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