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EDITORIAL

To what extent can telerehabilitation help patients in low- and middle-income countries?

Brazil is experiencing a major governmental crisis marked by strong disagreement between the Federal and State leaders regarding evidence-based health information on COVID-19. At the state level, leaders endorse protective measures such as quarantine, movement restriction, and social distancing. But these efforts have been subverted by the Federal government encouraging people to return to work. As a result, there has been poor adoption of protective measures against COVID-19, and a major growth in official diagnosed cases of COVID-19 so that Brazil ranks 2nd globally for COVID-19 deaths.

The Brazilian public health system has functioned close to maximum capacity and society is suffering from downturn in business. Mitigation policies for the population were voted and resulted in approval of a BRL 600 (approximately US$108) emergency financial aid for low-income citizens, unemployed, and autonomous workers for an initial period of 4 months. While emergency financial aid was a welcome initiative, the implementation of the program ignored the realities of life for the 107 million Brazilian people who desperately needed this aid. The Brazilian state bank Caixa used a website and app to provide access to the funds, an approach that presumed the intended recipients were health literate and had access to the internet. As a result, long lines have been registered outside Caixa's physical agencies in many cities. In countries where people struggle to feed themselves and their families, who would benefit from initiatives that demands knowledge and domain over digital and telecommunication technologies, such as telerehabilitation? And how can telerehabilitation initiatives become a democratic alternative within healthcare systems in low- and middle-income countries?

Digital health interventions, such as telerehabilitation, have been recently promoted because of their potential to overcome geographical barriers, increase access to health services, and provide an alternative means to continue treating patients whenever face-to-face encounters are precluded.[1,2] However, there are challenges in adoption of telerehabilitation for the low-income population.[3] Social determinants such as low income, low education, and low health literacy are already known barriers for participation in programs delivered using digital and telecommunication means.[4] An unintended consequence of the implementation of telerehabilitation is the favoring of a privileged minority of patients who are able to bear the costs of consultations in private centers, those able to make adequate use of technology, or with appropriate infrastructure for access (i.e. own a smartphone or a computer, have minimum broadband speed).

In Brazil, digital health interventions will not be an option for the same 107 million people initially assisted by the emergency supply. Brazil has the largest number of internet users in Latin America with 150 million users, but that still means that one third of Brazilian households lack access to the internet.[5,6] Among the poorest, only half have access to internet and that is typically of a very basic form: 3 G or 4 G technology through their mobile phones with limited internet package, mostly prepaid.[5] In addition, health and digital health literacy is another barrier to effective use of telerehabilitation.[4] It is known that people in low- and middle- income countries have lower health literacy levels than those in high-income countries. Despite the lack of national data, studies conducted in Brazilian public health settings revealed an important proportion of older adults with inadequate (low or very low) health literacy levels.[7,8]

The concept of health and digital health literacy relies on a set of context- and content- specific skills crucial for individual and community health empowerment.[9] So, making health information available is not enough; the population must be able to make sense of the information provided to develop a sense of trust and act upon reliable health information. The COVID-19 pandemic has exposed the society to an information overload without proper quality-control,[10] and having public health literacy levels would empower people to recognize, implement, and disseminate trustworthy health information, allowing better engagement with telerehabilitation initiatives.[4]

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Table 1 General recommendations for developing Health and Digital Health Literacies in low- and middle-income countries.

Level	Public health initiatives	
ENVIRONMENT	Broader access to internet Urban areas Rural areas	Facilitated by free good quality *wi-fi* connection in public areas Common areas (public libraries, central location, easy access) with free access to computers and the presence of technical support Guarantee broader good quality internet access in rural areas
SOCIOECONOMIC	Understand the context and adapt	Map sociodemographic realities of specific regions taking into account health literacy strengths and limitations to further design population-specific programs that best matches: Populations' health needs Populations' health literacy levels
INFORMATION	Up to date evidence-based information	Expose population to what is considered good quality information (evidence-based) through most pervasive medias such as radio, TV, social media Reassure science's vital role in healthcare through popularization of science
INDIVIDUAL	Call for action	Encourage critical thinking by stimulating independent investigation of health information on whichever source is available (internet, newspapers, TV, social media)

To implement telerehabilitation in a fair and equitable manner, health service planners need to be aware that strategies for low- and middle- income countries may require solutions at different levels (Table 1). Shifting attention to the advancement of health literacy and digital health literacy could be a compelling way of dealing with the complex health-technology iceberg and reduce health inequities. Achieving adequate levels of health and digital health literacies enables individuals to seek, find, understand, appraise, and implement health information into their situation and context both at individual and community level. Public health systems and the individual have shared responsibilities in developing, shaping, and preserving those skills.[11] Governments' role includes the provision of evidence-based and good quality health information through different medias, stimulating the development of a critical thinking behavior.

The successful adoption of initiatives embedded in digital and telecommunication domains by the poorest will depend on well-resourced educational initiatives. While high income countries turn their attention towards issues such as data privacy and best technology to deliver care; in low- and middle-income countries a central issue is patients' readiness for this new mode of health delivery.[12] Digital health literacy skills are necessary for an adequate and democratic implementation of telerehabilitation. Initiatives for the advance of digital health literacy are based on education and must be structured in different levels (environmental, socioeconomic, information, individual). To achieve the best outcomes, governments must share a common message to flatten not only COVID-19 curve but reduce existing inequities in digital health initiatives' implementation.

Conflict of interests

None.

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