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Strategies for persons with disabilities in public health emergencies, especially the COVID-19 pandemic

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Abstract *This study aimed to describe strategies and policies necessary to provide care for people with disabilities during periods of public health emergencies, especially COVID-19. Twenty-nine studies and 49 strategies were included, grouped into eight categories: 1) housing, mobility, and infrastructure; 2) work, occupation, and income; 3) social assistance; 4) telehealth; 5) comprehensive health care; 6) planning and management; 7) communication; and 8) education. The overview of the strategies can help to guide public policies, with feasible actions that promote more significant equity for disabled people.*

Key words *COVID-19, People with disabilities, Declaration of emergency, Policy making, Systematic review*

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Introduction

The COVID-19 pandemic affected more than 35 million people, resulting in more than 680,000 deaths in Brazil[1]. Due to the pandemic, complications arose directly and indirectly from the disease, such as the collapse of healthcare systems due to high demand, in such a way that other health conditions were harmed, producing an even more serious impact on the lives of people who were already facing a situation of social vulnerability[2].

The spread of the disease was uneven among the population, as there are social vulnerabilities that led to greater losses for specific population groups[2]. The homeless population, those in extreme poverty, prisoners, and the disabled population suffered more losses and injuries than did the general population. The difficulty in achieving a minimum income[3], the informality of work, poor housing conditions, and difficulty in accessing health services are factors linked to the social determination of health, which were intensified due to the COVID-19[2] pandemic.

Even before, people with disabilities were more prone to situations of social vulnerability, especially concerning health care[4]. It is estimated that there are 17 million people over two years of age with at least one function compromised by disability in Brazil, according to the 2019 National Health Survey (NHS)[5]. This group reported regular and poor self-rated health more frequently (49%), when compared to the general population (9%)[6].

In Brazil, a lack of information and training was identified, both for professionals and for family members and informal caregivers, as regards how to handle people with disabilities and the full complexity of care, especially in public health emergencies[2]. Health equipment is incipient in including processes and physical adaptations to meet the complexity of needs, in the physical, social, and psychological dimensions[7]. There is a lack of specialized teams, duly qualified, to treat neurodevelopmental disorders from primary to tertiary care[8]. The different health institutions in the public system offer fragmented assistance, moving away from the ideal model of comprehensive care for people with disabilities[9]. Patient and family education takes place sporadically and unsystematically, and the culture of health professionals and families regarding disability care is focused on hospital and specialized care[2,10].

Given the above, this review aimed to describe care strategies for people with disabilities in public health emergencies, especially during the COVID-19 pandemic period.

Methods

A systematic review (SR) was conducted following the PRISMA[11] guidelines. The PECO question was used, characterized by the acronym: P – population: adult people with disabilities, with no restrictions regarding the type of disability, which can be visual, auditory, intellectual, physical, or multiple; E – exposure: COVID-19 pandemic; C – comparator: not applied; O – outcomes: strategies that aim to improve prevention and health care for these people during the pandemic period.

Eligibility criteria

For conceptual purposes, people with disabilities were considered to be those who have long-term impairments of a physical, mental, intellectual, or sensory nature, which, in interaction with various barriers, can obstruct their full participation in society on equal terms with other people, in accordance with the Convention on the Rights of Persons with Disabilities[12]. The types of disability and specific populations were not defined a priori because this is an exploratory SR.

Furthermore, the concept of "public health emergency" was used in accordance with International Health Regulations, which consider events of great repercussion that require immediate action, or outbreaks of disease with epidemic potential, regardless of their nature, origin, or source, whose risk of propagation imposes restrictions on trade and/or human trafficking, and brings high morbidity and/or mortality rates that are different from usual[13].

Articles that addressed care, work, income, health, and social security strategies that aimed to reduce the effects of public health emergencies, especially COVID-19, on people with disabilities, as set forth by law, who are over 18 years of age, were considered eligible. Studies that addressed the general population were included if they presented strategies during periods of health emergencies. A comprehensive approach was chosen, including SR, narrative or integrative studies, qualitative and quantitative studies, and opinion articles. Studies that addressed disability or COVID-19 alone, etiology; pathophysiology and clinic pathology; other types of public health emergencies arising from earthquakes and hurricanes; and types of studies, such as reports, editorials, conference proceedings, newspaper comments, and case reports; as well as those written in a language other than English, Portuguese, or Spanish, were excluded.

Search for scientific evidence

A structured literature search was conducted in June 2021 and updated in November 2022. The PubMed, Web of Science, Scopus, VHL, CINAHL, PDQ, Health System Evidence, PEDro, Psycinfo databases were used. The descriptors used were: "COVID-19", "SARS-CoV-2", "Pandemics", "Emergency Responders", "Disabled Persons", and their cross-referenced synonyms; according to the complete strategy available in Annex 1 of the supplementary material: https://doi.org/10.48331/scielodata.2WZPVJ. The search strategies were adapted for each database.The PROSPERO protocol was published, whose identifier is CRD42021266341.

Study selection, data extraction and analysis

Two independent reviewers performed the selection by title and abstract, and the selection after complete reading using the Rayyan[14] software, with discrepancies being checked by a third reviewer. The studies excluded, with justification, after having read the full article are presented in Chart 1.

An excel spreadsheet, prepared by the authors, was used for data extraction, which was carried out by a reviewer and checked by the other two. Information was collected on the variables: author, year, country where the study was conducted, objective of the study, method, main results containing the strategies reported by the authors.

The list of strategies underwent a qualitative synthesis based on a deductive thematic analysis[15,16], which allowed for the creation of intervention categories that provide guidance for the improvement of possible public policies for people with disabilities, whose approach covered dimensions of the social determination of health[17]. Conceptually, social determination was characterized as a set of economic, social, political, governmental, and cultural situations that positively or negatively affect the health of individuals, social segments, communities, populations, and territories[17]. Such contextual situations are remarkable, as they perpetuate social disparities for people with disabilities[18].

The critical analysis of the list of strategies was carried out by two reviewers, generating a grouping table, validated by two other reviewers in three work meetings of the research team. The critical analysis of the contents of each strategy generated a connection with dimensions adapted from the model cited by Garbois et al.[17], namely: a) socioeconomic context: strategies grouped into housing, mobility and infrastructure, and work, occupation, and income, b) conditions of unequal access to goods and services: strategies grouped into access to services and goods, including telehealth and comprehensive health care, and social assistance, and c) social cohesion: strategies grouped into planning and organization contingency plans, communication, and education for people with disabilities, focusing on the centrality of the participation of disabled persons.

Quality assessment

To assess methodological quality, instruments from the global Joanna Briggs Institute (available at: https://jbi.global/critical-appraisal-tools) were used, according to the methodology reported in each of the included studies.

Results

A total of 2,703 references were identified. Of the total of 1,589 unique studies, 62 were selected for full reading, 36 of which[18-53] were included after applying eligibility criteria (Figure 1). In assessing the methodological quality of the included studies, although some presented uncertainties in the JBI[19,26,34,36,37] assessment fields, no study was excluded from this synthesis.

Among the studies included, 27.78% are theoretical studies, presenting recommendations for strategies based on regulations or documents prepared by organizations in the area of assistance, health, or social security. Opinion articles and qualitative studies totaled 19.44% each. Moreover, three scoping reviews, two cross-sectional studies, one observational study, one trial, one technical note, one consensus review, one document analysis, and two studies with no informed methodology were included.

As for the country of the study, the United States accounted for 16.67%, followed by Australia (8.33%); South Africa, Brazil, China, the Netherlands, India, and Italy (5.56% each); and Colombia, South Korea, Spain, North Korea,

Chart 1. List of excluded studies, with justification.

Justification	Excluded studies
Full text unavailable	1. Bradley VJ. How COVID-19 may change the world of services to people with intellectual and developmental disabilities. *Intellect Dev Disabil* 2020; 58(5):355-360. 2. Escalon MX, *et al*. Beyond a hashtag: strategies to move toward a more inclusive physiatry workforce. *Am J Phys Med Rehabil* 2021; 100(7):712-717. 3. Howe EG. A possible application of care-based ethics to people with disabilities during a pandemic. *The Journal of Clinical Ethics* 2010; 21(4):275-283. 4. Hsu N, Monasterio E, Rolin O. Telehealth in pediatric rehabilitation. *Physical Medicine and Rehabilitation Clinics* 2021; 32(2):307-317. 5. Qureshi AZ, *et al*. Telerehabilitation Guidelines in Saudi Arabia. *Telemed J E Health* 2021; 27(10):1087-1098.
Kind of study	6. AAPD. Passage of the American rescue plan marks victory for disability community [online]. 12 de março de 2021. Available from: https://www.aapd.com/pressreleases/american-rescue-plan-marks-victory-for-disability-community/ 7. Guidry-Grimes L, *et al*. Disability rights as a necessary framework for crisis standards of care and the future of health care. *Hastings Cent Rep* 2020; 50(3):28-32. 8. Medallon KGG. Of ensuring equitable participation of persons with disabilities during the COVID-19 pandemic. *J Public Health (Oxf)*; 2021; 43(2):e287-e288.
Language	9. Organisation Mondiale de la Santé. Considérations relatives aux personnes handicapées à prendre en compte dans le cadre de la flambée de COVID-19. Organisation Mondiale de la Santé 2020. Available from: https://apps.who.int/iris/handle/10665/332290.
Does not address public health emergencies	10. Bartz J. All Inclusive?! Empirical insights into individual experiences of students with disabilities and mental Disorders at German universities and implications for inclusive higher education. education sciences. 2020; 10(9):223. 11. Bricout J, Baker PM, Moon NW, Sharma B. Exploring the smart future of participation: community, inclusivity, and people with disabilities. *International Journal of E-Planning Research (IJEPR)* 2021:10(2):94-108.
Does not make strategies or needs to attend to the population with disabilities explicit	12. Anil K, Freeman JA, Buckingham S, *et al*. Scope, context and quality of telerehabilitation guidelines for physical disabilities: a scoping review. *BMJ Open*; 2021; 11(8):e049603. 13. Aryankhesal A, Pakjouei S, Kamali M. Safety needs of people with disabilities during earthquakes. *Disaster Medicine and Public Health Preparedness* 2018; 12(5):615-621. 14. Bakkum L, Schuengel C, Sterkenburg PS, *et al*. People with intellectual disabilities living in care facilities engaging in virtual social contact: a systematic review of the feasibility and effects on well-being. *J Appl Res Intellect Disabil* 2022; 35(1):60-74. 15. Correia LPF, Ferreira MA. Health care of deaf persons during coronavirus pandemics. *Rev Bras Enferm* 2022; 75(Supl. 1):e20201036. 16. Dalise S, Tramonti F, Armienti E, *et al*. Psycho-social impact of social distancing and isolation due to the COVID-19 containment measures on patients with physical disabilities. *Eur J Phys Rehabil Med* 2021; 57(1):158-165. 17. Drum CE, Oberg A, Ditsch J, Cooper K, Carlin R. COVID-19 & adults with intellectual disability, autism, epilepsy, or brain injuries: Health and Health Care Access Online Survey Report. Rockville, MD: American Association on Health and Disability; 2020. 18. Finkelstein A, Finkelstein I. Emergency preparedness – the perceptions and experiences of people with disabilities. *Disabil Rehabil* 2020; 42(14):2056–66. 19. Khan BA, *et al*. Impact of coronavirus (COVID-19) pandemic on persons with disabilities and caregivers. *Population Review* 2020: 59(2):180-188. 20. Landes SD, Turk MA, Wong AWWA. COVID-19 outcomes among people with intellectual and developmental disability in California: The importance of type of residence and skilled nursing care needs. *Disabil Health J* 2021; 14(2):101051. 21. Lindsay S, Ahmed H, Apostolopoulos D. Facilitators for coping with the COVID-19 pandemic: online qualitative interviews comparing youth with and without disabilities. *Disabil Health J*; 2021; 14(4):101113. 22. Meleo-Erwin Z, Kollia B, Fera J, Jahren ABA Basch C. Online support information for students with disabilities in colleges and universities during the COVID-19 pandemic. *Disability and Health Journal* 2021; 14(1):101013. 23. Pakjouei S, Aryankhesal A, Kamali M, Seyedin H, Heidari M. Positive effects of earthquake from the perspective of people with physical disability in Iran. *Int J Disaster Resil Built Environ*; 2021; 12(2):157-169. 24. Srivastava A, *et al*. Tele-neurorehabilitation during the COVID-19 pandemic: implications for practice in low- and middle-income countries. *Frontiers in Neurology*; 2021; 12:667925. 25. Selick A, *et al*. Virtual health care for adult patients with intellectual and developmental disabilities: a scoping review. *Disability and Health Journal*; 2021; 14(4):101132. 26. Senjam SS. Impact of COVID-19 pandemic on people living with visual disability. *Indian J Ophthalmol*; 2020; 68(7):1367-1370.

Source: Authors.

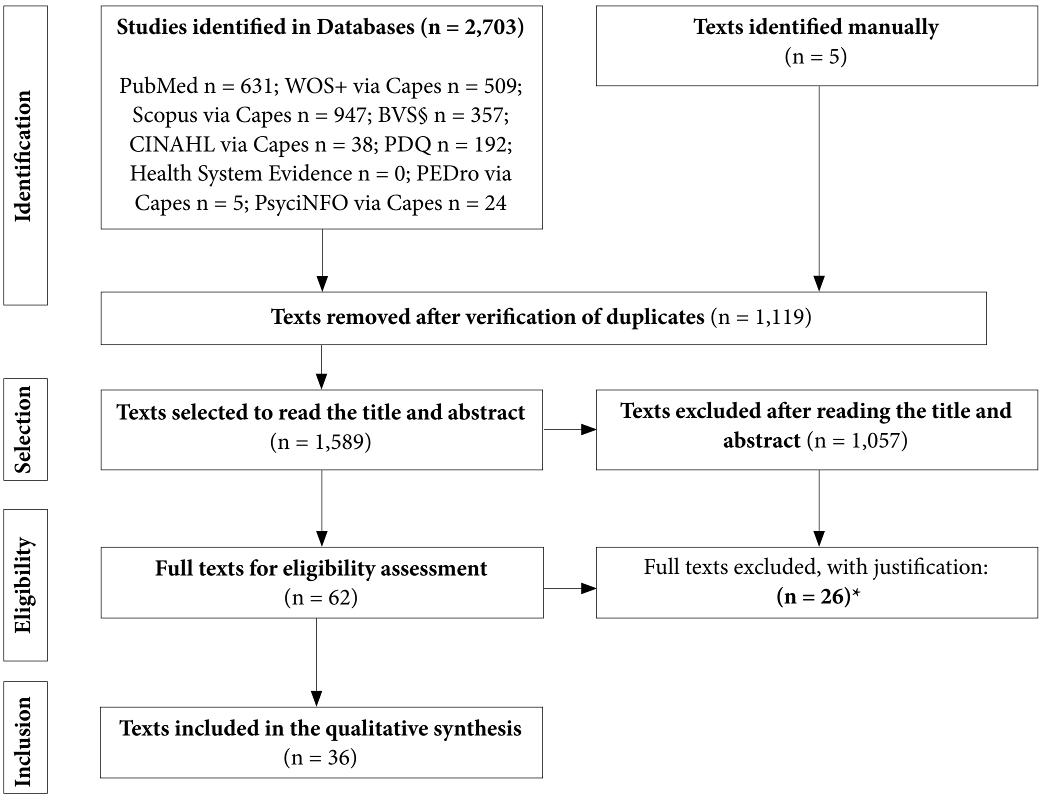

Figure 1. Flow chart of study selection.

$^{+}$ Web of Science; § Biblioteca Virtual da Saúde; * Chart 1 – list of excluded studies, with justification.

Source: Authors.

Philippines, Ghana, and Iran (2.78% each). Three studies reported broader definitions of location as their origin: South America, and low and middle income countries (LMIC) (3.57%, each). Seven studies had no defined country of origin (19.44%). Detailed information with the characterization of the studies is available in Annex 2 of the supplementary material: https://doi.org/10.48331/scielodata.2WZPVJ.

The strategies identified in the articles were grouped into categories (Table 2) systematized by the authors in order to address social determination in the living conditions of people with disabilities.

The included studies showed that people with disabilities still require greater care in times of public health emergencies. Among the strategies selected, the majority had exclusive approaches for people with disabilities (92.8%); however, options were also reported to meet the needs of the vulnerable population in general.

In the **housing, mobility, and infrastructure** category – dimension of socioeconomic context in the process of social determination – four strategies were identified. One study highlights the need for emergency accommodations (such as temporary shelters in population evacuation scenarios, such as in cases of natural disasters) to be close to access points to the healthcare and social assistance network, in addition to accessibility issues that must be observed[48]. One study was identified on the importance of protection programs for people living in institutions/shelters, due to a greater vulnerability to infections, suggesting restrictions on visits and referral of suspected cases to health services within two hours after identifying the first symptoms, in addition to the already recommended isolation

Chart 2. Strategies to provide care to people with disabilities during periods of public health emergency, according to categories classified based on the findings of the included articles.

Category	Strategies
Housing, Mobility, and Infrastructure	1. Emergency accommodation close to points of access to the health and social care network[42] 2. Protection programs for institutionalized people with disabilities[41,44] 3. Special transport for people with disabilities and their caregivers[50] 4. Enable mobility of family members within the national territory to care for people with disabilities in times of social isolation[50]
Work, Occupation, and Income	1. Flexible work arrangements[46,51] and infection control measures to be supported by employers[51] 2. Policies to encourage in-person hiring and teleworking for people with disabilities[21,46] 3. Support network for employees with disabilities[46] 4. Income transfer programs with employment assistance and financial aid[41,33,44,47,50] 5. Tax exemption programs for people with disabilities[44]
Planning and management	1. Decision-making system, with the development of a contingency plan[18,27,25,51] together with people with disabilities[19,44,46,47], in order to ensure that critical operations and essential services are maintained even during periods of crisis[21] 2. Compliance between the International Convention on the Rights of Persons with Disabilities and local policies and laws[42] 3. Formation of strategy planning councils for people with disabilities in partnership with the community[32,34,3542,47] 4. Conducting studies that help define prevention, treatment, and risk mitigation measures for people with disabilities[26,29,36] 5. Strengthening national health legislation and policies in accordance with the Convention on the Rights of Persons with Disabilities (CRPD)[22,29] 6. Regulation of health plans to prohibit discriminatory practices[29,39,44]
Social assistance	1. Benefits packages delivered directly to people with disabilities[42,44] 2. Social assistance providers must be in contact with health planners for intersectoral action[34] 3. Support network for people with disabilities[18,21,51] with guaranteed access to appropriate PPE for this network[33,47] 4. Guarantee of social assistance provided in a safe manner[31,39,50], with the possibility of registering online, by telephone, or with automatic enrollment through government registration[30] 5. Support networks in the community to help identify serious cases and monitor the wellbeing of the population with disabilities, offering specific support[33,41] and involving different sectors[33] 6. People with disabilities should take control of their own health decisions whenever possible[29]
Teleservice	1. Telecare services for assessment, treatment, and monitoring of people with disabilities[20,28,23,30,33,37,38,50,51] 2. Telecare services in the field of rehabilitation, such as physiotherapy and occupational therapy[37,50] 3. Adoption of inclusive digital technologies, with multiple communication modes available, intuitive interface, and user-centered design[22], for telehealth services for people with disabilities[23,48,49] 4. Definition of guidelines for telemedicine in psychiatry and social assistance to carry out online interventions[24,45] 5. Creation of programs to adapt rehabilitation services and create a comprehensive system using remote rehabilitation and other technologies[37,38,40]

it continues

measures[22]. Also in this category, two strategies were identified in the field of mobility. The first brought the strategy of special transport for people with disabilities and their care in times of public health emergencies[25]. The second, the need to allow for the mobility of family members within the national territory to care for people with disabilities in times of social isolation[54].

In the **work, occupation, and income** category – dimension of socioeconomic context in the process of social determination – five strategies were found that aimed to guarantee the financial dignity and job security of people with disabilities during health emergencies. Studies have recommended flexible work arrangements, especially for people with disabilities, as they are

Chart 2. Strategies to provide care to people with disabilities during periods of public health emergency, according to categories classified based on the findings of the included articles.

Category	Strategies
Communication	1. Accessible communication, with the development of inclusive training and communicative materials for the visually and hearing impaired, among others[25,26,28,32,33,35,37,38,41,47,51,44,46,50,51,] 2. Guidelines issued by health authorities for family members of people with disabilities in a public health emergency[23] 3. Sharing of information about solving problems related to pharmacotherapy, nutrition, physical activity and healthy habits, and self-managed practical activities[23] 4. Promote public awareness about the vulnerability, opportunities, dignity, and respect of people with disabilities[23,33,38] 5. Personalized messages with the engagement of community groups that form support networks for people with disabilities, such as non-governmental organizations, religious groups, self-help groups, among others[39]
Comprehensive Health Care	1. Continuing education of health professionals to provide personalized care and management, considering the individual limitations of people with disabilities[18,26,29,42,50] 2. Availability of an interpreter in healthcare services[50] 3. Health safety education and training for caregivers and family members during the pandemic[33] 4. Identification and elimination of barriers and obstacles to accessibility in healthcare facilities[29,33,50] 5. Home care services, whenever possible[44,50] 6. Decentralization of care provided to users with disabilities regarding local health services[34,36] 7. Improve health coverage and accessibility as part of the universal approach to health care[19,29,27,33,43] 8. Specialized outpatient care services, such as psychologists, physiotherapists, and speech therapists[32] 9. Access and support to psychosocial services to provide emotional support[32] 10. Support from specialized professionals to define recreational or leisure activities that can be performed in isolated environments[19,21] 11. Preparation and supply of emergency kits to people with disabilities, in accordance with care prescriptions, on an individual basis[18,44] 12. Identification of sources of resilience for people with disabilities so that professionals can improve the way in which they provide health care to people with intellectual disabilities and caregivers can provide clear and understandable information about COVID-19 measures[19,53] 13. Community informants to carry out health assessments and rehabilitation of people with disabilities in order to reduce dependence on medical staff[42] 14. Involvement of schools and health bodies in planning health actions[39] 15. Free and equitable vaccination program for people with disabilities[44,47] 16. Virtual leisure and physical exercise programs[30]
Education for Persons with Disabilities	1. Computer literacy to facilitate access to services during the pandemic[52] 2. Construction of inclusive learning guidelines[52]

Source: Authors.

more vulnerable to infections[26,52]. In view of this, the importance of infection control mechanisms in the workplace was also mentioned in order to increase the safety of workers in these places[26]. The findings revealed that even in teleworking spaces, disparities were present, requiring adjustments in accommodations and structural conditions in the environment in which the disabled person works[18]. Despite the reservations, teleworking was considered a great opportunity for people with disabilities and could be a way of leveling employment opportunities during periods without health emergencies[18].

The need to create and back support networks for employees with disabilities was also highlighted[52]. One of the studies[22] identified several strategies from South American countries addressed as options for employment and financial aid for people with disabilities, such as: emergency family income, extra transfers to families, paid leave for those who cannot continue working during the pandemic, permission for online registration of new people with disabilities, and automatic renewal for longer periods by security bodies and employment protection policies[22,40]. A tax exemption strategy for people with disabilities[50] was also identified.

Regarding the **social assistance** category – dimension of unequal access to goods and services – the limited control that people with disabilities have over their health benefits has been reported in the literature[48]. Such benefits, especially when they are minimum income benefits, must be transferred directly to people with disabilities, with transfer to guardians only in cases authorized under law[48,50]. Furthermore, these benefit packages must take into account the needs of people with disabilities, allowing for comprehensive care to be provided to this population in periods of public health emergencies[25,41,48], with the possibility of registering online, by telephone, or with automatic enrollment through government registration[21].

The **telehealth** category – dimension of unequal access to goods and services – covered several strategies aimed at accessing telecare services for the assessment and treatment (teleconsultation and telerehabilitation) of people with disabilities[21,25,26,29,31,32,36,40,44,45,51], allowing access to various health services without putting people at risk of the contamination and spread of COVID-19[45]. Telerehabilitation approaches as an alternative to in-person care were useful and viable at the expense of the development of internet infrastructures and widespread use of smartphones and computers[44]. However, there is a need for such technologies to be inclusive, with multiple communication modes available, along with an intuitive interface and user-centered design[31].

In the **comprehensive health care** category - dimension of unequal access to goods and services – 16 strategies were found, in the field of continuing education for health professionals to better serve people with disabilities, eliminating accessibility barriers to health facilities, the comprehensiveness of health care, and the identification and use of the strength of the support network for people with disabilities to plan and support health actions. Our study identified the importance of expanding rehabilitation services[32], the need for specialized services for people with disabilities[39], the expansion of access to psychosocial services during periods of health emergencies[39], the availability of interpreters in healthcare services[25], the decentralization of these services[41,43], virtual leisure and physical exercise programs[21], and a free and equitable vaccination program for people with disabilities in countries where access to health care is not free[50,53].

Studies point to ongoing education for health professionals to better serve people with disabilities, including the development of skills for health planning in cases of emergencies[46]; personalized management, considering individualities[19,26,28,34,37,48]; and the development of skills to instruct caregivers to provide support for people with disabilities concerning their needs[40]. A strategy was also identified to train caregivers to assess and support the health conditions of people with disabilities in order to support the multidisciplinary team[48]. Accessibility to health facilities and providing access close to home were also reported strategies[37,40].

In the **planning and management of contingency plans** category – dimension of social cohesion in the process of social determination – six strategies were found, namely: decision-making with the participation of people with disabilities to define contingency plans in cases of natural disasters; specific evacuation and contingency planning for vulnerable individuals[18-20,26,34,50,52,53]. Such plans should be developed at government and community levels, based on data from each community obtained from local tracking and surveillance[34].

Another recommended strategy was to ensure the definition of disability and accessibility in accordance with the United Nations Convention on the Rights of Persons with Disabilities, in order to facilitate access for people with disabilities to health services, as well as to programs and resources made available in health emergency scenarios[48]. Inclusion of people with disabilities in the planning process of actions against COVID-19, in order to strengthen national legislation and policies, identify and eliminate obstacles and barriers to accessibility in health facilities, improve coverage and access for people with disabilities. Training of health professionals on the inclusion of people with disabilities, prohibition of discriminatory practices in insurance companies and health plans, inclusion of rehabilitation in supplementary health, and the improvement of data collection for the assessment and monitoring of actions aimed at this population in health systems[37].

The **communication** category – dimension of social cohesion in the process of social determination – covered five strategies. Accessible communication, whose definition goes beyond the provision of closed captions, translation into sign language or braille, also requiring the translation of knowledge for the creation of informative and communicative materials in order to offer information in a language that is easy to understand and comprehend[18,22,24-26,34,36,39,40,42,44,45,50,52].

Furthermore, studies highlighted the sharing of information and systems on social media platforms, along with accessible personalized tools to solve clinical or practical problems related to pharmacotherapy, nutrition, physical activity and healthy habits, and self-managed practical activities[32]. The communication and dialogue between different actors is essential in raising awareness concerning the vulnerability of people with disabilities, as well as in raising the awareness of health professionals so as to offer equal opportunities, and maintain dignity and respect for people with disabilities[40].

To conclude the category, the use of personalized messages, together with the engagement of community groups that form support networks for people with disabilities, was recommended[46]. Non-governmental organizations, religious and self-help groups, among others, help to create a favorable environment for social support for people with disabilities, as well as support for daily needs[40].

Finally, in the **education** category – dimension of social cohesion in the process of social determination – the importance of accessibility and digital literacy was reported, especially for people with visual impairments[27]. Technological tools would allow people with disabilities to access everyday activities more easily, which is important for educational and labor inclusion[27]. Furthermore, the importance of establishing universal learning guidelines was also identified, seeking to favor the teaching process and the right of access to educational environments that are adapted to and focused on their needs[27].

Discussion

From the articles analyzed in this study, strategies were identified that aimed to meet the needs of people with disabilities during public health emergencies. Such strategies were grouped into eight intervention categories involving dimensions within the context of social determinates of health – socioeconomic, conditions of unequal access to goods and services, and social cohesion.

Regarding work, occupation, and income, the Brazilian scenario can be observed, in which people without disabilities have a higher percentage of employment in formal jobs as compared to those who have some type of disability. And the situation becomes even more worrisome when one includes the racial aspect in the analysis of working conditions: within the group of people with disabilities, even if the employment level of black and brown people is higher than that of white people, the formalization rate is noticeably smaller[55]. Therefore, considering labor inequalities as a structural problem, which permeates the experience of people with disabilities when health emergencies are absent, global and local development plans must take into account the specific needs of the population with disabilities and the maximization of jobs set aside for vulnerable populations[18].

Regarding access to telehealth, Senjam et al.[40] corroborate the strategies found, as they state that teleconsultations have educational potential for caregivers or the support network of people with disabilities. Such strategies were reinforced during the COVID-19 pandemic, in which, in addition to mitigating the effects of social distancing through calls and teleconferences, technologies were also tools used for healthcare relationships. However, it is important to highlight the importance of defining guidelines for teleservices, in addition to specific training for online interventions[33,51]. For Jayarajan et al., telecare has several challenges, which include concerns about the privacy of patient data, access to devices that enable remote care, in addition to the limitation of care provided within the scope of telerehabilitation, which cannot be only remote, as it hinders socialization and practical training[33]. Furthermore, it is important to observe whether or not the caregiver of a person with a disability supervises the activities carried out remotely, as the emotions expressed and behavior may in fact be different in the presence of third parties[33].

In relation to comprehensive health care, the findings showed the need to strengthen local legislation and health policies, whose fundamental rights for people with disabilities should include access to health, whether public or private[31,37]. Therefore, discriminatory practices in the supplementary health sector (such as exorbitant prices and needs for people with disabilities, low coverage of rehabilitation procedures, and denial of specialized care) must be combatted and duly punished[37,46].

In the context of ways of planning and organizing contingency plans, it was noted that few plans or guidelines provided details on how planners could meet the needs of people with disabilities before, during, and after public health crises. Campbell et al.[41] pointed out the lack of consistency in contingency plans, the type of approach to be used, and evidence of their effectiveness. Both the population with disabilities and their caregivers must be included in the planning of actions to deal with emergencies in order to guarantee feasible alternatives[41]. People with disabilities, their caregivers, and supporters must be involved in the development, evaluation, and execution of planning and responding to public health crises[41].

Regarding communication aspects, gaps are discussed in terms of having information regarding contingency needs, target population, and effective prevention and intervention strategies for these situations, proposing records of identifiers related to disability in surveillance systems in health and other assistance systems, aimed at monitoring epidemiological and social patterns of people with disabilities[43]. In this sense, there was a need to improve information system instruments and expand their use in order to strengthen the assessment and monitoring of actions geared toward people with disabilities and provide greater support for decision-making in future health emergencies[34,37].

Moreover, in relation to electronic means of communication, it was observed that electronic services and internet pages in Brazilian municipalities still present a significant gap when compared to available digital technologies that guarantee a greater accessibility of these systems. Of the Brazilian municipalities, only 39.1% allow navigation through all interactive items on the page without the need for a mouse; 34.1% describe the content of the images; 34% describe the content of the pages with the text that appears in the browser tab; 17.7% allow the user of assistive technology to skip repeated items on the page; 16% use CAPTCHA for requests; and 6.9% include the translation of content into LIBRAS; whereas 21.3% do not adopt any of the alternatives[55].

For social cohesion, in addition to the participation of people with disabilities in contingency plans and inclusive communication processes, there is also the strengthening of support networks, a recurring theme[19,24,26,30]. One study[19] stated that strengthening support networks for people with disabilities must be a constant activity, carried out by establishing relationships of trust between users and local emergency services, neighbors, and community groups, highlighting that care measures must also be geared toward caregivers. Once the link between a person with a disability and the service and support network is established, this network contributes to the communication of the complexities of disabilities which, in turn, aids in discussions to guarantee funding for health equipment for this population[24,26].

During COVID-19, the literature highlighted the fragility of online education programs, with few adaptations aimed at the population with disabilities, highlighting the need for programs that promote digital inclusion for this population[27]. The democratization of technology, which has been a necessity since the pre-pandemic period, in which only 68.8% of all people with disabilities had home access to the internet, has proven to be even more urgent in the context of the crisis and the emergence of access barriers for people with disabilities to online education[27].

Finally, aspects that must be considered when implementing the strategies are under debate, as are the levels responsible for each stage of design and the strategy target levels (Annex 3, available at: https://doi.org/10.48331/scielodata.2WZPVJ). It was observed that the implementation must occur with public policies that promote intersectoral actions.

In this sense, the present article contributes to the adaptation of healthcare measures in future health crises, as well as those that can be included outside of health emergencies, such as inclusive and adapted communication for visual, hearing, and intellectual disabilities, which must be considered and carried out for any type of health action. The growth of teleservices demands further debate, as they can be a solution to the problem of transport for people with disabilities, commonly considered an obstacle, in addition to reducing physical contact between the attendant and the patient in order to reduce the spread of infectious diseases to vulnerable populations, among other strategies that, in addition to theory, must be put into practice in an accessible manner.

One such study[22] analyzed government responses for people with disabilities in Brazil, Argentina, and Chile, and concluded that, despite there being recommendations, the countries did not develop concrete responses to put into practice, with policy planning and access improvements and with few changes made to help people with disabilities adapt to the reality of COVID-19.

In Brazil, although some government guidance initiatives have been implemented, the health scenario of people with disabilities in the pandemic context is still unknown, with epidemiological and social information on this population being mostly scarce and incipient[20]. The government actions that have been implemented were aimed at SARS-CoV-2 prevention guidelines for people with disabilities[56], recommendations for professionals who care for people with disabilities in the context of the pandemic[57], and recommendations for complementary emergency measures to guarantee disabled people's rights and social protection in the context of COVID-19[56].

However, these were general guidelines with no binding implementation, given the position of the National Health Council (Recommendation no. 031), which brought instructions to the Ministry of Health, Ministry of Economy, Ministry of Citizenship, Ministry of Women, Family and Human Rights, Ministry of Education, and Professional Class Councils. The recommendations made at the time converged with the strategies identified in this review, addressing topics such as accessibility and access to health and rehabilitation services, opportunities for teleconsultations and teleguidance, inclusive communication, economic aid, and job security, among others[56].

The WHO recommendations for governments and health services also corroborate the findings of this review, with recommended actions, including accessible communication, actions for support networks for people with disabilities and for service providers (including health professionals), emergency contingency plans, among others[58,59].

The findings shed light on several topics that demand attention in the field of public policies that focus on social determinants, the most frequently mentioned being accessibility policies, mainly in relation to information, education, and work and income benefits.

Study limitations

Despite the heterogeneity regarding the design of the studies, few of these were of low quality, as they were opinion-based articles. This methodological limitation did not interfere in the objective of providing an overview of the actions adopted for people with disabilities during times of public health emergencies. This comprehensive search included strategies adopted in different realities, which can support the improvement of public policies for people with disabilities.

Contributions to the area

Addressing strategies to aid people with disabilities during periods of public health emergencies made it possible to create strategies to formulate programs and policies aimed at health at the levels of health and social protection systems. It was also possible to observe strategies aimed at developing protocols and guidelines to support professional conduct when caring for people with disabilities and promoting cultural exchange among health professionals when interacting with people with disabilities.

Final considerations

This systematic review brought eight categories of strategies to deal with public health emergencies, such as COVID-19, for people with disabilities. Such an overview can help decision-making and the formulation of health policies and actions for populations in vulnerable scenarios, given that, during periods of health crises, these populations are more susceptible to diseases and suffer from structural factors of social determination.

The strategies provide guidance for policies that can be adopted on a routine basis, and not only in public health emergency situations, with feasible actions that promote greater equity. Health access and equity policies are essential and must be formulated with community members, considering that priorities and implementation aspects can be realistically identified.

Collaborations

Study conception and planning: FTS Elias. Data collection and analysis: ALAGMC Silva, MC Ramos. Data interpretation: ALAGMC Silva, MC Ramos, DR Rezende, FTS Elias. Manuscript preparation and review: ALAGMC Silva, MC Ramos, DR Rezende, FTS Elias. All authors approved the final version of the manuscript and assume public responsibility for its content.

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