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HEALTH SURVEILLANCE IN BRAZIL: VULNERABILITIES AND HEALTH STRATEGIES TO DEAL WITH FUTURE PANDEMICS

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ABSTRACT

This article presents a systematic review of the literature on health surveillance in Brazil in recent years, focusing on vulnerabilities and strategies for dealing with future pandemics. The methodology used is a systematic review, using databases such as LILACS, Scielo and Google Scholar. The results indicate that, although there have been significant advances in epidemiological surveillance, there are still important gaps that need to be addressed, respecting the different social groups. The discussion addresses the main vulnerabilities identified and proposes strategies to strengthen the surveillance system in Brazil based on an inclusive intersectoral model. It is concluded that the main vulnerabilities are associated with the need to adapt public policies to the social characteristics of the groups. The main strategies are supported by increasing social participation and access to health.

Keywords: Public health surveillance. COVID-19. Brazil. Strategy. Vulnerability.

INTRODUCTION

Health surveillance is an indispensable tool for the field of knowledge and public health practices, and is defined as a set of actions that aim to monitor and control factors that may impact collective health. (ARREAZA; MORAES; 2010)

The National Health Surveillance Policy (PNVS) aims to monitor and promote the health of the population, through the identification, analysis and control of risks and public health problems covering several areas, such as epidemiological, environmental, sanitary and worker health surveillance. (BRAZIL, 2019)

The implementation of health surveillance is carried out with collaboration between federal, state and municipal spheres, in addition to counting on the participation of the community and the work of health professionals for effective and integrated monitoring. (BRAZIL; 2019)

Guimarães et al (2017) states that public policies present major challenges related to the difficulty in assessing and monitoring the impact of the occurrence of diseases due to the different social vulnerabilities and geography of Brazil.

Arreaza and Moraes (2010) emphasize that health surveillance must be understood as a continuous process of collecting, analyzing and interpreting health-related data with the clear objective of guiding decision-making and health implementations.

According to Rouquayrol (2018), health surveillance encompasses the collection, analysis and interpretation of data related to diseases and conditions, allowing the identification of trends and the formulation of effective public policies.

The health surveillance process can suffer different impacts due to unexpected situations such as the COVID-19 pandemic. The COVID-19 pandemic, caused by the SARS-CoV-2 coronavirus, has highlighted the importance of health surveillance as an essential tool for controlling infectious diseases (LANA et al ;

2020).

It is important to reference the specific contribution of the epidemiological surveillance system, which involves the collection, analysis and interpretation of data on the health of the population, which was fundamental to monitoring the spread of the virus and guiding public health policies such as vaccination in the population. (BRASIL, 2023).

The implementation of surveillance measures, such as case reporting and outbreak investigation, allowed for a more agile and effective response to the health crisis (WHO, 2021).

Prado et al (2021) consider that primary health care (PHC) is the main access point for people, configuring a critical basis for direct surveillance and management, emphasizing the importance of PHC as a strategy to guarantee technical, operational, logistical support and provision of resources favoring the implementation and development of control strategies.

Health surveillance has proven to be a fundamental pillar in the fight against COVID-19, highlighting the need for continued investment in this area to address

future challenges and development of coping strategies. (FREITAS; VILELA, 2021)

In the context of pandemics, the effectiveness of surveillance systems can determine a country's ability to contain the spread of diseases and minimize their impacts. In Brazil, health surveillance faces significant challenges due to factors such as territorial extension, regional inequalities, and resource limitations. (FREITAS; VILELA, 2021)

Tomkiel and Manz (2023) describe in their study the composition of four main categories of challenges faced by health surveillance during the COVID-19 pandemic period: inspection of establishments, monitoring of health measures and compliance with protocols, communication and awareness of the population, and work overload and limited

resources.

To face future public health crises, continuous and sustainable investment in the health system, training of professionals and development of effective strategies to face future public health crises will be necessary. (TOMKEL; MANZ, 2023; PEREIRA, 2024)

Through the studies, the question emerges: what are the main vulnerabilities identified by the health surveillance system in Brazil during the COVID-19 period and what are the possible strategies for dealing with them?

We believe that the main vulnerabilities are associated with Brazil's geographic size, availability of technology and training of active health workers.

This study is justified as the COVID-19 pandemic highlighted the importance of robust and well-structured health surveillance systems for the development of effective public policies adapted to different social scenarios.

OBJECTIVE

Identify the vulnerabilities of the health surveillance system in Brazil during the COVID-19 pandemic and list the main strategies that should be developed to face future pandemics.

METHODOLOGY

Qualitative systematic literature review study. The databases used were Latin American and Caribbean Literature in Health Sciences (LILACS), Scientific Electronic Library Online (SciELO), and Google Scholar. The Health descriptors (DEC's) included public health surveillance, COVID-19, Brazil, vulnerability, health strategy.

Different studies published between 2018 and 2023, in Portuguese, that addressed health surveillance in Brazil and strategies to combat pandemics were included. Studies that did not present empirical data or that were not available in full text were excluded.

The selection of studies was carried out in

three stages: reading the titles, reading the abstracts and reading the complete articles. The data were extracted and presented in a table format with information about the author, year of publication, objective of the study, methodology, results and conclusions. Data analysis was performed qualitatively, identifying recurring themes and gaps in the literature.

RESULTS

After initial screening in the LILACS and SciELO databases, a total of 4 articles were captured using the adapted health descriptors; health surveillance, COVID-19 pandemic, vulnerabilities, health strategies, Brazil, from which they were excluded following the analysis and content criteria.

When the descriptors were entered into Google Scholar, 20 articles were captured, of which 4 (four) were analyzed and 119 were excluded from the sample, following the exclusion criteria that considered the irrelevance of the content, the duplication of publications and the lack of access to the full text. This rigorous approach ensured the selection of relevant and quality studies for analysis.

Table 1 – Vulnerabilities and coping strategies for future pandemics.

AUTHOR(S)	YEAR	TITLE	OBJECTIVE	METHODOLOGY	MAIN RESULTS
Meneses, Michele Neves et al.	2023	Popular health surveillance practices in Brazil: scoping review.	Identify the practices of Popular Health Surveillance in Brazil, described in the scientific literature	Scoping review	Main strategies: individual and collective initiatives to strengthen solidarity networks; community actions to confront the problem with partnerships between residents, social organizations, and the public and/or private sector, whether coordinated or independent; diagnosis of with the territory; popular monitoring and data production by the population; recognition of practices and dialogue with popular knowledge, listening process within the territory.

AUTHOR(S)	YEAR	TITLE	OBJECTIVE	METHODOLOGY	MAIN RESULTS
FIELDS, Alice Romano; ALFAMA, BARBOSA, Conrad Carvalh o Horta	2022	Determinants of health vulnerability of indigenous peoples in the context of the COVID-19 pandemic: an integrative literature review.	Identify and gather evidence on the determinants of IP vulnerability to COVID-19 infection	Peer review	THE discontinuity of Indigenous Health actions, ineffective participation strategies, financial interference and the historical lack of data on IP converge to a situation of greater vulnerability in the face of the COVID-19 pandemic, deepened by difficulties in accessing products and services that meet indigenous specificities.
Souza, Daiane de Oliveira	2022	Impact of Covid-19 on the black population's access to health services: Integrative review	Highlight and debate the consequences of the Covid-19 pandemic on the black population's access to care Primary Health, as the main gateway to system, and at other levels of care	Integrative literature review	(1) Covid-19 has brought to the forefront of discussions the issues related to the health of the black population and access to health services; (2) it was possible to observe the invisibility and underrepresentation of these issues in the academic environment.
MILK, Isadora Abdalla Machado	2022	Homeless population and the approach adopted by the SUS during the Covid-19 pandemic: integrative review.	To contextualize the experience of the homeless population and the health actions developed by the SUS during the COVID 19 pandemic, in light of the scientific publications available on the subject	Integrative review	The COVID-19 pandemic reached Brazil in a scenario of unemployment, impoverishment and other risk factors that are related to the transmissibility of the disease. This reality has shown that crises Economic factors are elements that can facilitate the transmission of infectious diseases, as well as hinder the implementation of control actions.

Source: prepared by the author.

DISCUSSION

The results of the systematic review of the last five years on health surveillance in Brazil demonstrated that the greatest vulnerabilities are not associated with the implementation of monitoring processes in different scenarios in Brazil, but rather with the invisibility of social groups.

The article *Popular health surveillance practices in Brazil: scoping review* carries out a detailed analysis of popular surveillance practices in the context of health in Brazil, highlighting their importance in strengthening social participation and improving public health policies. (MENESES, 2023)

The scoping review provides a broad view of the approaches adopted in different regions of the country, identifying the main strategies and methodologies employed, as well as the challenges faced by the social actors involved in

this process. The study also addresses the relationship between popular surveillance and the SUS (Unified Health System). Single Health System, highlighting the role of civil society in building more democratic and accessible health. (MENESES, 2023).

The article *Determinants of health vulnerability of indigenous peoples in the context of the COVID-19 pandemic: an integrative literature review* addresses the multiple dimensions of vulnerability faced by indigenous populations during the pandemic, focusing on the social, economic and cultural determinants that aggravate the health conditions of these communities. (CAMPOS; ALFAMA; BARBOSA, 2022).

The study highlights the importance of integrating traditional knowledge and collective health strategies adapted to the specific realities of these populations, proposing the need for a more attentive and sensitive look at the particularities of each indigenous people in facing health crises such as COVID-19, describing the importance of an intersectoral approach with public policies that recognize their autonomy and promote equity in access to health care. (CAMPOS; ALFAMA; BARBOSA, 2022; WEISS, 2023)

The article *Homeless population and the approach adopted by the SUS during the COVID-19 pandemic: an integrative review* carries out a critical analysis of the responses of the Unified Health System (SUS) in assisting the homeless population during the COVID-19 pandemic, with an emphasis on the limitations and challenges faced by this highly vulnerable group. The integrative review reveals that, despite the SUS initiatives, such as the creation of temporary shelters and the expansion of health actions, the response was not sufficient to guarantee the comprehensive protection of this population, which suffers from the lack of access to basic care, precarious living conditions, and social exclusion. (LEITE, 2022).

The study highlights that the pandemic has accentuated pre-existing inequalities, exposing

the difficulty of implementing effective public policies to serve this population in a situation of extreme vulnerability, and points out that the approach adopted by the SUS was marked by a lack of coordination between the spheres of health, social assistance and housing policies, which compromised the effectiveness of the actions. (LEITE, 2022).

The article *Repercussions of Covid-19 on the black population's access to health services: Integrative review* critically examines the racial inequalities that have been deepened by the COVID-19 pandemic, focusing on the black population's access to health services. (SOUZA, 2022).

The integrative review presents an analysis of the main barriers faced by this population, such as structural racism, discrimination in health institutions and greater social vulnerability, which result in limited access to adequate health care. (SOUZA, 2022).

The study highlights that, in addition to greater exposure to the virus due to precarious working and housing conditions, the black population also suffers from the lack of effective public policies that meet their specific needs during the pandemic. By relating data from the scientific literature, the article points out that the pandemic has highlighted pre-existing inequalities in the health system, where the black population is at a disadvantage in both the prevention and treatment of COVID-19. (SOUZA, 2022).

The analysis suggests the urgent need for public policies that promote equity in access to health, respecting ethnic-racial particularities and combating institutional racism. Thus, the study contributes to a broader understanding of the repercussions of the pandemic on the health of the black population and reinforces the importance of implementing inclusive and anti-racist strategies in the health system. (SOUZA, 2022).

Table 2 - List of coping strategies

Popular health surveillance practices in Brazil: scoping review.	<ul style="list-style-type: none"> • Social participation • Health Education • Epidemiological Monitoring and Surveillance • Reporting violence and social injustice
Determinants of health vulnerability of indigenous peoples in the context of the COVID-19 pandemic: an integrative literature review.	<ul style="list-style-type: none"> • Mobilization of leaders • Integration of knowledge • Strengthening primary care actions • Support for public policies and inter-institutional coordination
Impact of Covid-19 on the black population's access to health services: Integrative review	<ul style="list-style-type: none"> • Affirmative actions and anti-racist public policies • Health education and awareness • Strengthening the SUS and expanding access • Training healthcare professionals to deal with racial diversity • Articulation between health, social assistance and education
Homeless population and the approach adopted by SUS during the Covid-19 pandemic: integrative review.	<ul style="list-style-type: none"> • Reception and protection actions • Expansion of the supply of health services • Distribution of protective and hygiene materials • Interinstitutional coordination • Educational actions and awareness

Source: prepared by the author.

CONCLUSION

At the beginning of the study, our initial hypothesis was that the main vulnerabilities were associated with Brazil's geographic size, integration of health data, access to technological devices, and training of health professionals. In this sense, our hypothesis was not confirmed, but the studies directed our attention to minority social groups.

We were able to verify that the main vulnerabilities are associated with the difficulty in developing an inclusive intersectoral model that respects culture and ethnic-racial characteristics, favoring access to health.

The main strategies are supported by social participation, equity and respect for diversity that will favor the health process and adapt health surveillance monitoring while respecting cultural diversity.

This study does not close the subject, it only intends to contribute to the development of new and more articles that can support the development of new public policies.

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