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Critical analysis of policies and strategies to combat the Zika virus in Brazil: using the WPR approach

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Abstract *Exploring narratives present in public policies to control the Zika virus becomes fundamental, given the possibility of new epidemic waves and their harmful effects. The objective of this study was to critically analyze the documents guiding the fight against the Zika virus, implemented by the Brazilian government, from 2016 to 2022. This is a qualitative, exploratory, documentary and analytical study, using the What's The Problem Represented approach (WPR). Three categories emerged from the analysis: (I) Representation of the problem: biomedical and technical narrative in the health-disease process; (II) Solutions, political options and their effects on the operationalization of actions and on the lives of children and mothers and; (III) The silence and neglect of policies in the effectiveness of actions: low integration between information systems and low focus on structural and collective actions, limited access to care technologies of greater complexity and cost for children with congenital syndrome associated with Zika virus infection; limited support network for family groups made up of black women, with low income and little education. The analysis highlights a set of policy options that have contextual and epidemiological relevance, but that make vulnerable populations invisible.*

Key words *Zika Virus, Health Policy, Arbovirus Infections*

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Introduction

Following its emergence in 2015, the Zika epidemic in Brazil posed a number of public health challenges due the association of the virus with cases of congenital microcephaly and other fetal malformations and the scarcity of knowledge for effective intervention[1-3].

Although the second wave of infection spread throughout the entire country, the Northeast region had a higher number of recorded cases of microcephaly than other regions, highlighting significant regional differences. To this day, the causes that led this region to be the most affected remain unknown[4]. However, there seems to be a relationship between infection severity and socioenvironmental determinants such as poor housing and social vulnerability[5,6].

Social vulnerability is particularly marked among families of children with Congenital Zika Syndrome (CZS), adding to the burden already imposed by the disease[7]. Partner abandonment, low level of family support[8], precarious financial situation, difficulty accessing health services and maternal physical and mental exhaustion are some of the issues that exacerbate the already severe post-infection fetal outcome[8-10].

To mitigate the effects of the Zika epidemic in Brazil, the federal government has implemented guidelines, control and monitoring strategies and care protocols[11]. However, factors such as poor coordination between actors, deficiencies in basic sanitation services, social inequality, lack of public accountability and placing the blame on vulnerable populations have limited the effectiveness of response strategies[12-15].

In this context, public policy analysis can play an important role in mitigating social problems by improving the formulation and implementation of the evaluated policies[16]. Despite progress over recent years in the analysis and evaluation of health policies, a number of issues remain unaddressed, given that the program and policy implementation process is a terrain characterized by bargaining, coalition-building and the 'convergence of different intentions'[17].

Conventional approaches to policy analysis tend to focus on solving problems rather than questioning their origin[18]. Since the representation of problems in a policy can often lead to distortions in design, structuring and operationalization, questioning and exploring the policy can help improve analysis and guide corrections[19]. In this context, the use of analytical tools that allow us to understand 'implicit problems' within public policies can open up perspectives to find solutions, making it possible to reflect on the role governments and institutions play in generating these problems[20].

In view of the above, this study aimed to critically analyze documents that guided the Brazilian government's response to the Zika epidemic using the What's The Problem Represented to Be? (WPR) approach [18].

Methods

We conducted an exploratory qualitative documentary analysis using the WPR approach. The documents were selected and analyzed in four steps: (1) search of the communication channels of the Brazilian Ministry of Health to find documents; (2) document selection; (3) reading and organization of material; and (4) critical analysis using the WPR approach. The study search and selection process is illustrated in Figure 1.

In the first step, a request was made to the General Office for the Coordination of Arbovirus Surveillance via the *Fala.BR* platform to access all documents relating to Zika control and prevention implemented by the Brazilian government, including guidelines, protocols, policies, strategies and action plans published since the emergence and identification of the virus in the country in 2015[21].

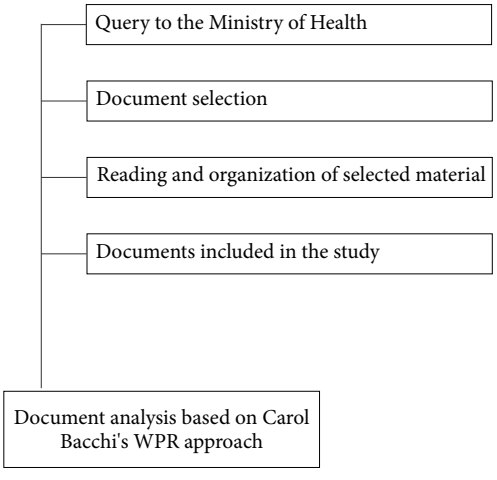

Figure 1. Flowchart illustrating the literature search and study selection.

Source: Authors, 2023.

All documents addressing Zika guidelines and control and prevention strategies were included. Documents referring exclusively to clinical issues and vector management were excluded.

The full-text versions of the documents were then read, organized and analyzed using the WPR approach, which applies six analytical questions (Chart 1)[18]:

(1) What's the 'problem' represented to be?; (2) What presuppositions or assumptions underpin this representation of the 'problem'?; (3) How has this representation of the 'problem' come about?; (4) Where are the silences?; (5) What effects are produced by this representation of the 'problem'?; (6) How has the 'problem' been questioned?

The questions aim to explore and critically question 'that which is not problematized', since public policies can have limitations due to the way they highlight or silence 'problem' issues[18] (p.13). Thus, discussing and identifying issues that are silenced in the representations of problems provides a different perspective, enabling reflection on the practices that can produce these 'problems'[20].

The documents analyzed in this study are shown in Chart 2. According to National Health Council resolution 510 (April 7, 2016), studies that use publicly available information are exempt from ethics review.

Results

Four documents published between 2016 and 2022, the period of the Zika virus epidemic, were selected. The WPR analysis of the narratives resulted in the following three categories: representations of the problem detected from the objectives and lines of action outlined in the documents; solutions formulated based on political options in the historical context; silences explored in the document analysis and presented in Chart 3.

Representation of the problem: dominant narrative of the health and disease process

The findings show that the representation of the increase in cases of Zika virus infection and microcephaly resulting from CZS is based on responses that are still underpinned by knowledge supported by the doctor-centered model, which overlooks socio-environmental aspects. The focus on the cause of disease perpetuates a technical, vectorial, biological, clinical and statistical approach, without progressing on the social determinants of health (SDHs). While the importance of SDHs may be acknowledged, these aspects are not part of the operationalization of policies. Risk is still understood from a classical, epidemiological and statistical standpoint, which aims to control biological and

Chart 1. WPR approach analytical questions.

"What's the Problem Represented to Be?" (WPR)	
Questions	**Objective**
What's the problem represented to be in a specific policy?	To identify implicit representations of problems.
What presuppositions or assumptions underlie this representation of the problem?	To identify and analyze the conceptual logics that underlie representations of specific problems; recognize deep-seated cultural assumptions and values underpinning the representations.
How has this representation of the 'problem' come about?	To highlight the conditions that allow a given represented problem to take shape and assume dominance.
What is left unproblematic in this representation of the problem?	To reflect on the discussion of issues and perspectives that are silenced in the representations of identified problems.
What effects are produced by this representation of the problem?	To allow critical analysis to continue by identifying the effects of representations of specific problems.
How has this representation of the problem been produced, disseminated and defended?	To pay attention to the ways in which certain representations become dominant; an opportunity to challenge representations of problems that are considered harmful.

Source: Adapted from Bacchi and Goodwin[20].

Chart 2. Documents selected for analysis.

References	Policy/strategy document(s)
Brasil[22]	*Estratégia de Resposta ao vírus Zika e o combate ao mosquito transmissor* (Zika virus response strategy and the fight against the mosquito vector)
Brasil[23]	*Orientações integradas de vigilância e atenção à saúde no âmbito da Emergência de Saúde Pública de Importância Nacional* (Integrated guidelines for health surveillance and care in the context of a Public Health Emergency of National Concern)
Brasil[24]	*Vírus Zika no Brasil: A resposta do SUS* (Zika in Brazil: The SUS response)
Brasil[25]	*Plano de contingência para resposta às emergências em saúde pública por dengue, Chikungunya e Zika* (Contingency plan to respond to public health emergencies caused by dengue, chikungunya and Zika)

Source: Authors, 2023.

quantitative indicators, with limited discussion of aspects of vulnerability, which are so important when dealing with affected groups.

The cause of congenital defects is presented as exposure to the virus, which is a biological perspective, thus underplaying social, economic, environmental and ecological determinants. The guidelines and actions focus on child functioning rather than quality of life. Combating the vector remains focused on individual responsibility, through peridomestic control of Aedes aegypti and the use of insecticides (larvicides and adulticides) during inspections by endemic disease control workers.

The representations of the problem influence policy options and dictate the absence of important issues in policies that would otherwise ensure more effective actions, particularly affecting the prevention of new epidemics and Zika and CZS case monitoring.

Solutions, political options and their effects on the implementation of actions and children's and mothers' lives

The political options underline the importance of the epidemiological and emergency issues that marked the study period. Response strategies were underpinned by epidemiological data, combining vector control actions, care and support for affected groups, and making it possible to integrate and expand actions and services related to monitoring changes in the growth and development of children, differentiating Zika from other infectious diseases caused by viruses. Reports detailing experiences and the history of the epidemic from the point of view of various professionals were also published with the aim of filling gaps in knowledge on the impact of the Zika virus.

However, despite presenting contextualized options relevant to the epidemiological scenario, these political options were influenced by the representations of the problems, impacting the operationalization of actions, making them: fragmented in the field of action and work processes; limited in the contextual, conceptual and effective use of SDHs; fragile from an intersectoral perspective; unidirectional by not highlighting that the problems are systemic and structural; procedural and not backed up by comprehensive care; insufficient in relation to aspects of social, economic, racial and gender vulnerabilities; exclusionary in failing to perceive and include women and children as primary subjects in the development of actions and policies.

One of the effects of these policies on children with CZS is that treatment of cases focuses on functioning rather than quality of life. Fragmentation of care in the health care network occurs when responsibility for provision of more complex and costly care technologies is not clearly defined in the lines of care provided by federated entities.

The effect of silences and neglectful policies on the effectiveness of actions

Silences included limited integration of information systems, as well as the lack of specific actions to ensure system reliability, particularly when it comes to case reporting. Resulting problems, such as poor data consistency and agility, can limit the effectiveness of case investigation and monitoring, hampering outbreak and epidemic prevention and control decision-making.

Differences across regions and populations are often ignored, and the Zika virus epidemic is addressed from a single perspective. In par-

Chart 3. Exploration of the silences in the political documents analyzed.

Document	Year	Silences (absences)
Estratégia de Resposta ao vírus Zika e o combate ao mosquito transmissor[22]	2016	• Action with an impact on infrastructure and sanitation. • Actions to mobilize the population collectively, focusing on individual responsibility. • Intersectoral, interministerial and interfederative integration actions. • Information processes and flows (e.g. reliable notification system) are limited. • Partnerships between different social actors, institutions and sectors occur occasionally and sporadically, only in times of crisis. • Different territorial and social realities determine the distribution of cases of infection and microcephaly/central nervous system alterations.
Orientações integradas de vigilância e atenção à saúde no âmbito da Emergência de Saúde Pública de Importância Nacional[23]	2017	• Integrated action by surveillance and health care teams. • Actions to control data reporting to prevent underreporting/omission of data, jeopardizing the reporting, analysis and dissemination of information; support for the conclusion of cases, abortions, fetuses at risk of congenital syndrome and timely recording of deaths for the proper completion of the Declaration of Live Births to identify congenital anomalies. • Integration of information systems. • Installed laboratory diagnostic capacity. • Access to quality antenatal care according to risk classification. • Effective implementation of timely comprehensive diagnosis and follow-up of children with growth and development alterations. • Timely and effective implementation of stimulation of neuropsychomotor development, aimed at the habilitation, rehabilitation and social inclusion of children with growth and development alterations. • Effective implementation of psychosocial support for pregnant women, families and children. • Effective implementation of intersectoral actions to strengthen health care and social protection for children. • No specific guidelines for regions and cases aggravated by social vulnerability.
Vírus Zika no Brasil: A resposta do SUS[24]	2017	• Monitoring and quality of the information system reporting process - does not address problems related to underreporting. • Investment in research on the association between SDHs and the existence of other factors that can protect or increase the risk of malformation and different levels of severity conditions among affected children. • Patient care challenges - most of whom are from disadvantaged families and mothers with a low level of education. • Access to care and lack of confirmation of microcephaly. • Structural urban mosquito control actions and policies, making women and children even more exposed to the aggressive potential of vector and virus. • Difficulties imposed by social inequalities. • Risk communication during epidemics. • Intersectoral approach to vector control, considering vector control a collective responsibility. • Limitations in the laboratory network (structure, supplies, professionals). • Infrastructure, basic sanitation and distribution of drinking water still bottlenecks for effective vector control. • Integration of health surveillance actions and primary care. • Health surveillance and promotion actions are still disease-focused.
Plano de contingência para resposta às emergências em saúde pública por dengue, Chikungunya e Zika[25]	2022	• Integration between actors remains a theoretical construction, with no clear definition of how it should be materialized in practice. • Incentives or participation of women and mothers in the formulation of policy or actions: women remain without a voice or active presence.

Source: Authors, 2023.

ticular, the lives of low-income black women with a low level of education living in peripheral communities lacking basic sanitation, adequate garbage collection and access to clean drinking water should be better represented, ensuring the completeness of data and inclusion of variables on the case notification form; however, there are no specific proposals for the formulation of policies and actions to address these specificities. Neglect of the interrelation between these variables in the policies analyzed shows the absence of important discussions on intersectionality and consequent repercussions for the care and support provided to affected women, children and families.

The documents fail to address, or only superficially touch on, structural causes such as basic sanitation, urban infrastructure, deforestation, poor housing, social vulnerability and access to clean drinking water (Figure 2). Overcoming weaknesses in health education actions is also not addressed and the documents disregard family participation. There is a lack of spaces for active listening and methods to promote listening tailored to meeting affected women's and children's health needs.

Government vector control measures focus on mechanical and chemical control in the form of short-term prevention actions, minimizing the importance of community-level long-term actions addressing infrastructure and sanitation.

While the documents address issues related to the care of pregnant women and children with microcephaly, the guarantee of a comprehensive diagnosis and quality care and follow-up has yet to materialize. Comprehensive care guidelines exist, but there is no specific guidance on referrals and advice, especially considering regional differences. Furthermore, difficulties experienced by mothers on their pathway through the health network are disregarded.

Also with regard to diagnosis, the documents recognize the importance of adequate and sufficient human and material resources, laboratory facilities, equipment and qualified professionals to ensure early, accurate and comprehensive diagnosis; however, specific forms of long-term funding of these resources are not discussed.

A graphical summary of the findings from the Zika virus monitoring policies and action documents is presented in Figure 2.

Discussion

The silences identified in this study show that the political option for responding to the Zika virus is based on a biological, doctor/medication-centered perspective, with a strong focus on disease prevention and few solutions based on the SDHs, which are often reduced to vector control issues. The dominant narrative of the health and disease process overlooks the complexity of the arbovirus and its impacts, which is consistent with other studies in Brazil[26,27] showing the presence of this narrative in the discussion of chronic diseases.

Government vector prevention and control campaigns lack educational communication, being merely informative rather than educational. There is therefore a need to develop dialogic strategies aimed at transforming everyday practices, since arbovirus prevention and control should extend beyond the elimination of vector breeding sites[28].

A study by Pereira[29] shows that prevention campaigns focus on individual responsibility, disregarding collective aspects such as the importance of looking after public spaces and the lack of general commitment to and co-responsibility for prevention[30]. They therefore place the population in the position of preventive subject, thinking only of the individual, blaming the mosquito vector and disregarding environmental and climatic factors as a cause and in preventive actions[29].

Our findings reveal a clear need to develop effective integrated systems that provide access to up-to-date data and enable the construction of consistent and reliable information[31,32]. In line with a study carried out in Pernambuco identifying the need to reorganize services, resources and investment in the qualification of surveillance professionals, the results show that specific actions are essential to improve the quality of information systems so that they can achieve their objectives[33].

Studies show that the Zika epidemic in Brazil has disproportionately affected black women with low socioeconomic status[34,35], with black and brown women being more likely to have a live birth with CZS than white women[34].

Due to factors such as social vulnerability, poor housing and poor access to education, black women are at higher risk of infection[35], as shown in the study by Lima *et al.*[36]. The study showed that black, single, unemployed women with a low level of education are more likely to be affected by the Zika virus, reinforcing the im-

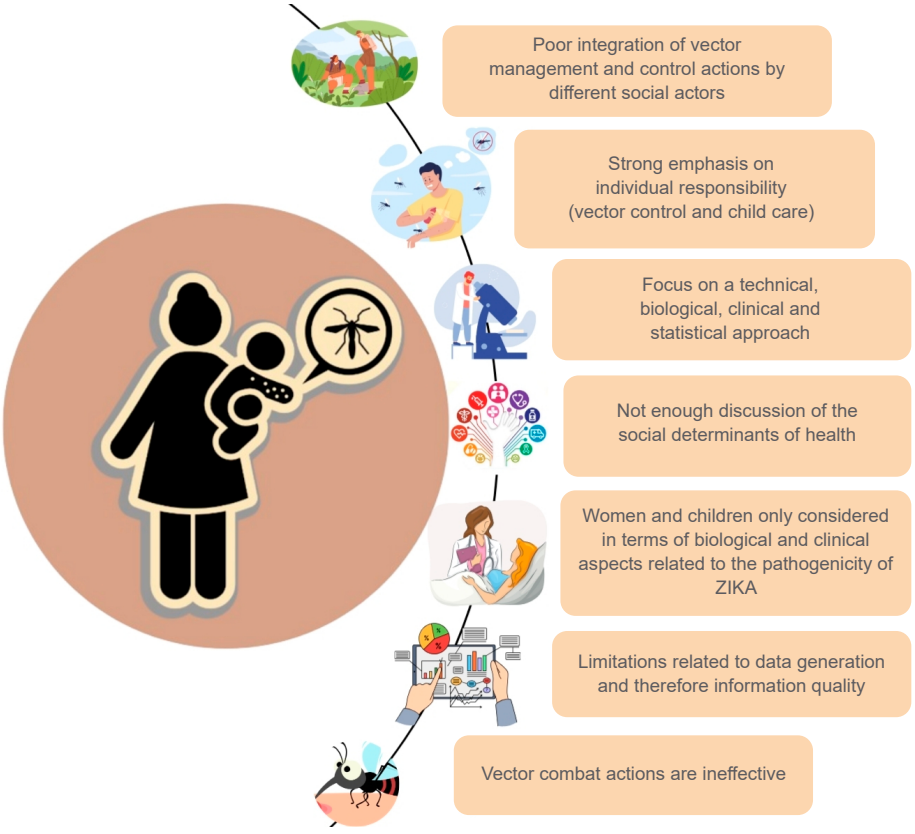

Figure 2. Compilation of the findings of the WPR analysis of Zika policies and response strategies in Brazil.

Source: Authors, 2023.

portance of planning strategies to combat racial discrimination and social vulnerability, which are discussions that are absent from the policies analyzed[30].

In this respect, it is important to mention that certain variables, such as race/skin color and education level are underreported. This can contribute to the persistence of social and racial inequality and hamper the recognition of the needs of each specific group[36].

It is important to highlight that the notorious racism and sexism suffered by black women in policies in Brazil hinders universal and equitable access to services provided by the country's national health system, *Sistema Único de Saúde* (SUS)[37]. The documents analyzed are silent on specific actions and policies tailored to this group, ignoring the importance of intersecting race, gender and class categories in determining the health of this group, whose rights are denied on a daily basis[37].

From this perspective, it is essential to hold continuing debates about institutional racism in health organizations, since this makes it possible to combat inequality, providing equal access to health services for this population and, consequently, more targeted and effective actions for this group[38]. Racism is operationalized through actions in conjunction with different policies and mechanisms of repressive control, providing specific groups the minimum needed for survival. In this way, the state neglects the black population through public policies that do not uphold basic principles of justice, equity and universality[39].

With regard to socioeconomic conditions and health emergencies, a study in Pernambuco found that families living in neighborhoods with a monthly income of less than two minimum wages are at higher risk of infection by Zika virus[40]. These results are consistent with the findings of Souza *et al.*[41], who reported high

prevalence of microcephaly in areas with poor living conditions.

Queiroz and Medronho[42] found an association between high incidence of arboviruses and low economic status, while other authors highlight the importance of adequate water treatment and supply and sewage disposal[14,34,41,43] in the fight against infectious diseases[43].

Access to health services by mothers and relatives of children affected by CZS is another critical point that must be considered in relation to the post-Zika epidemic[2]. Some studies have shown that these groups encounter difficulties accessing adequate health care due to the lack of specialists, public transport and social vulnerability[2,44].

Meireles *et al.*[45] emphasize that factors such as low socioeconomic status and poor access to health services are the biggest challenges faced by caregivers, since care for these children is mostly provided outside the municipality of residence. Long travel times to specialist health services or facilities (some families must make a 6-hour round trip for a 30-minute appointment)[44] and lack of public transport in the outskirts of cities or rural areas result in the abandonment of early stimulation sessions[46]. While the federal government has introduced financial assistance for families of children with CZS (sanctioned by Law No. 13985), the amount is insufficient to cover treatment expenses, meaning that other support structures need to be implemented within the health network[47].

The lack of specific welcoming and active listening actions for mothers and family members in policy implementation weakens the inclusion of women from this group in the development of actions ranging from planning to child rehabilitation.

Lack of knowledge about the risk and severity of CZS highlights the need to disseminate adequate information[48]. Issues such as family planning, the right to abortion under specific circumstances, access to health services and social security need to be better addressed in official documents on the Zika virus.

In addition, building dialogic spaces with other mothers experiencing similar situations enables sharing of experiences, help and emotional support, as well as moments of joy and collective empowerment[49].

It therefore falls on public managers to incorporate solutions and structural alternatives into policies to address weakness in the health care system and in communication between health professionals and services, promoting comprehensive care for vulnerable groups, particularly women and children. Actions aimed at tackling the Zika virus will only be truly effective if they encompass practices that promote social equity[1,48,50].

Conclusion

The WPR approach applied to documents that guided the Brazilian government's response to the Zika epidemic enabled the identification of silences that have had a negative impact on arbovirus control and prevention, culminating in policies that disregard the social determinants of this problem, including racial, gender and income equity for the development of integrative actions.

A broad-ranging discussion on restructuring the health care network is essential for it to be able to effectively support women and children with CZS, considering comprehensiveness, intersectionality and the reduction of the psychosocial and economic impacts on these families, which are issues that continue to be addressed in an imprecise and ineffective manner in official documents.

Collaborations

LC Santos contributed to study conception, the document search, data analysis and interpretation, and to the writing and revision of the article. ABN Einloft contributed to study conception. JA Silva contributed to the document search, data analysis and interpretation, and to the writing and revision of the article. D Cabrini, RMM Cotta and GD Costa contributed to study conception and to revising the article critically for important intellectual content. All the authors approved the final version of the article.

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Data availability statement

The data sources adopted in the research are indicated in the article's body.

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