Perception of the population on the role of authorities and communities in controlling arboviruses

Percepção da população sobre a atuação das autoridades e das comunidades no controle das arboviroses

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ABSTRACT The environmental control for prevention of arboviruses depends both on the actions of public authorities and the involvement of communities. The present study analyzed the perception of 385 citizens of 17 municipalities from the 5 regions of Brazil regarding the actions of the authorities and the community itself in relation to the control and prevention of dengue. The participants acknowledged that actions such as basic sanitation, regular waste collection, inspection of vacant lots and closed homes have often been neglected by the authorities. There was a tendency to hold the community accountable, through the example of neighbors who do not carry out prevention procedures. It was also noteworthy the silencing around unfavorable social conditions that can hinder the implementation of prevention procedures. We also reflected on the damage that the COVID-19 pandemic has caused to preventive practices and its possible future impacts.

KEYWORDS Arboviruses. Disease prevention. Community. Public power. COVID-19.

RESUMO *O controle ambiental para a prevenção das arboviroses depende tanto de ações dos poderes públicos quanto do envolvimento das comunidades. A presente pesquisa analisou a percepção de 385 pessoas em 17 municípios das 5 regiões do País sobre a atuação das autoridades e da própria comunidade em relação ao controle e à prevenção da dengue. Independentemente da região, os participantes reconheceram que ações como saneamento básico, coleta regular de lixo, fiscalização de terrenos baldios e domicílios fechados têm sido frequentemente negligenciadas pelas autoridades. A responsabilização da comunidade, na figura do vizinho que não cumpre as medidas de controle, também foi percepção dominante, chamando a atenção a ausência de qualquer reconhecimento sobre como condições sociais desfavoráveis influenciam nas dificuldades para a realização dos procedimentos preventivos. Reflete-se ainda acerca dos prejuízos que a pandemia de Covid-19 tem causado às práticas preventivas e seus possíveis impactos futuros.*

PALAVRAS-CHAVE *Arboviroses. Prevenção de doenças. Comunidade. Poder público. Covid-19.*

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Introduction

Dengue, zika e chikungunya are arboviruses among the major global concerns of public health, in both high incidence and prevalence and also its potential complications[1]. In Brazil, in 2020, were registered 979.764 probable dengue cases, with incidence rate of 466,2 cases per 100 thousand inhabitants; 48.316 chikungunya cases and 4.666 of zika. However, from the 12ª epidemiological week, it can be observed a decrease in the probable cases in relation to the previous year. This reduction can be related to the emergence of the pandemic of the new coronavirus[2].

The prevention of these arboviruses and the reduction of the transmissibility depend on the of the handling of the vector *Aedes aegypti*, in all its development stages, through actions of combat including private homes public routes, schools, hospitals and workplaces of the communities, in which there is the importance of modifying the behaviour of individuals and community through measures coordinated inside and outside of the health sector[3].

Nevertheless, it has to be differentiated, in the coordination of integrated actions, which ones would be the responsibility of the population and which would be of the responsibility of the public power. Basic sanitation with supply of piped water, regular garbage collection and the chemical control of mosquito larvae have been widely recognized as typical actions of the public power. Regarding actions that are the population´s responsibilities, the ambient control in private homes and in workplaces, aiming to avoid ideal conditions for egg-laying and developing of larvae, and the combat of the existing focuses have been the main procedures[4,5].

To inform the population about the prevention procedures, the State has been using massive campaigins in radio and TV. Between 2013 and 2017, 30 prevention campaingn films were produced by the Ministry of Health, available on YouTube, and 18 advertising pieces collected on the institution´s website, materials conveyed in Brasil. However, studies show the insufficiency of these strategies of mass campaign for an effective action of the population[6,7].

Furthermore, it has been pointed out, frequently, the necessity of making a difference between the nature of the procedural elements, such as knowledge, attitudes and practices, and of how they have been perceived in the different social contexts, stem from this differentiation, understand the viability of the implementation of the proposed guidelines[8,9].

Regarding the authorities, it has been evidenced that the actions need to be of intersectoral and integrative nature, involving governments and communities. The World Health Organization (WHO) and the Pan-American Health Organization (PAHO) defend a process of rational decision making for the optimized use of resources and the integrated management of vectors, that aims to strengthen the vectorial control programs, through coordinated measures inside and outside the health sector, capable of promoting the modification of individuals and communities' behavior[1,3].

A recent report, resulting of the dialog between specialists and managers of Latin America and Caribbean about susteinable actions in the combat of arboviruses, has highlighted the appropriate formation of human resources, approval of laws and other regulations that facilitate the favorable interventions, for example the management of solid residues and intersectoral collaboration in health[10].

In spite the importance of such governance actions, studies have demonstrated a tendency of the communities and health professionals in holding accountable their own members for the failure in the prevention, reporting carelessness with the private homes and ambients, low sanitary awareness and obstacles to the work of the Community Health Agents and Endemic Combat Agents[11-13].

Other studies investigate the perception of the population regarding the action and the responsibility of the public powers, for

an effective prevention. Such studies are important, to contribute in the adjustment of the action of the authorities and improve the strategies of social communication and professional training. However, they have been carried out in specific municipalities, having a local or regional character[14,15], or aiming the evaluation of the population regarding the health sector[16].

Therefore, the present study targeted to analyze the perception of the population in 17 municipalities of the 5 Brazilian regions regarding the action of the authorities in relation to the control and the prevention of dengue and about the behavior of the society itself in the combat of the vector.

Methodology

This study integrates a national project 'Arbocontrol – Arbovírus dengue, zika e chikungunya share the same vector insect: the *Aedes aegypti* mosquito – molecules of Brazil and of the world for the control of new technologies in health and management of information, education and communication', coordinated at the Department of Collective Health of the University of Brasília (UnB) and funded by the Ministry of Health/Health Surveillance Secretariat.

The research belongs to the component 3 of this project – Education, information and communication to control the vector – and had a intervention-research character, structured through workshops with members of the communities about knowledges and practices of prevention of arboviruses. Thus, whilst the participants acquired greater command of the knowledge, attitudes and practices of prevention, contributing to their adequacy to their contexts, were produced data about the perception of the participants in relation to the responsibilities of the communities and of the public power.

39 workshops were held in 17 municipalities, of 8 states, in the 5 macro-regions, distributed as follows: North: Araguaína/TO, Macapá/AM and Vilhena/RO; Northeast: Campina Grande/PB, João Pessoa/PB and Fortaleza/CE; Central-West: Anápolis/GO, Caldas Novas/GO, Goiânia/GO and Planaltina/GO; Southeast: Belo Horizonte/MG, Governador Valadares/MG and São Bernardo dos Campos/SP; and South: Cascavel/PR, Dois Vizinhos/PR and Gramado/RS.

The selection of the municipalities was made by the combination of criteria of urbanity of the Brazilian Institute of Geography and Statistics (IBGE)[17], of 2017, of level of infestation, according to the Rapid Survey of the Infestation Index by *Aedes aegypti* (LIRAa) of 2016[18] and 2017[19], and by convenience, aiming ease of access of the researchers.

Were included urban municipalities, adjacent intermediate and remotes, and excluded all the rural and those which demonstrated worsening or stagnation of the LIRA between 2016 and 2017, framed in the alert classifications for risk and risk of outbreak.

Each workshop was conducted by two trained researchers, with participation of at least 4 and a maximum of 12 members of the community, with an average of 9 participants per workshop, totalizing 385 people in the Country. The participants were of both sexes, with age equal or superior to 18 years old, excluding health professionals or others involved in the prevention measures.

The workshops were recorded and transcribed. To the *corpus* of the transcription, was applied the analysis of content of Bardin[20], with quantitative approach. The categories 1) Perceptions about the action of the authorities in the prevention and 2) Perceptions about action of the community in the prevention were established according to the objectives of the study.

The project was approved by the Comitte of Ethics in Research of the Faculty of Health Sciences of UnB, under opinion nº 2.480.722. The agreement in participating in the workshops was through Informed Consent Form, before they started.

Results and discussion

Perception about the performance of the authorities on prevention

This category originated five subcategories: 1.1 The lack of sanitation; 1.2 The irregular garbage collection and the destination of solid waste; 1.3 The lack of inspection in vacant lots and closed homes; 1.4 Need of legislation that establishes fine for non-compliance of prevention measures; and 1.5 Critics to the ACS and ACE's performance.

THE LACK OF SANITATION

The problem of basic sanitation appears as the most important concern in all regions of the country. It arises in the more frequent speeches relating to open sewage and the lack of piped water that force the population to save water in wells, water tanks and other recipients. Besides that, it is mentioned about the Country as a whole and about an specific street, municipality or state.

> *[...] the biggest problem of all this, is the lack of a Brazil with basic sanitation [...].* (Araguaína/TO).

> *Here we have a big problem in the whole neighborhood, is that we do not have basic sanitation.* (Fortaleza/CE).

> *[...] there are many cities that do not have sewage network, open sewage is a leaven for the mosquitos.* (Goiânia/GO).

> *[...], no, it is the whole Country, basic sanitation, garbage collection, then , if you work in the health sector and can warn about basic sanitation [...].* (São Bernardo do Campo/SP).

> *[...], it is open sewage [...].* (Cascavel/PR).

> *[...] what happens is that [...] we are in need of basic sanitation [...].* (São Bernardo do Campo/SP).

The lack of basic sanitation is a serious problem. Even though an efficient sanitation does not solve the problem completely, its importance is consensual in literature. Studies demonstrate that the lack of water supply by piped networks and the inadequate management of rain water provide ideal conditions for proliferation of urban arboviruses[21].

Besides that, the fact that the homes without sanitation have to pour sewage and use water in in peridomiciliary regions, the lack of piped water imposes to people the necessity of saving it in large recipients that need to be frequently opened, becoming potential nurseries for the mosquito's eggs.

Pamplona[21] argues that, in the Northeast region, the large deposits used to save water are infested by the *Aedes aegypti* in varied stages of its life cycle.

Gonzalez Fernandez et al.[22], studying the evaluation of measures of municipal control implemented in Mexico for dengue, demonstrate that the sectors responsible for the basic sanitation were the ones that have least contributed for the prevention actions. In a study that analyzed the perception of the ACS and of the ACE regarding the challenges faced for the control and the dissemination of the mosquito, the deficiency of the basic sanitation was highlighted as one of the major challenges to the control work[23].

After the implementation of a sewage system in a neighborhood of Natal/RN, Bay e Silva[24] demonstrated how the population perceived that the procedure was fundamental to avoid the accumulation of water in the streets, to reduce vectors and decrease the occurrence of arboviruses. Similar data was found in epidemiologic study carried out in Aracaju/SE[25].

Finally, in a large revision about successes and failures on the control of infectious diseases in Brazil, the arboviruses figure among those with the most flawed control, and the lack of basic sanitation was considered one of the main reasons for this flaw[26].

In spite the fact that North and Northeast having the lowest levels of population that

have basic sanitation, in this study, the problem arises as dominant in the speeches of participants of all regions.

THE IRREGULAR GARBAGE COLLECTION AND THE DESTINY OF SOLID WASTE

The lack and the irregularity in the garbage collection and and an inefficient management of solid waste can also be perceived by the communities as problems in the authorities' actions.

> *All people who have garbage in the backyard [...] People gather, put all there in the street and the City Council delays, but ends up collecting.* (Cascavel/PR).

> *[...] even at the capital, all of the sudden, the collection stops or gets messed up, if becomes a mess.* (Goiânia/GO).

> *[...] there is an empty place with an old truck body with a lot of garbage thrown and it stays there accumulated...it is the public power that has to take care and it is the community that has to go for it.* (Fortaleza/CE).

> Recent study in Recife/PE has used multivariable linear regression aiming to evaluate the impact of garbage collection and of the types of garbage on the incidence of dengue, demonstrating the importance of the regular garbage collection in the reduction of incedence of the disease. The regular collection of tires, for example, has presented the highest level reduction of incidence of the disease (0,465 that correspond to some thousands of cases less)[27].

Stand out the perceptions founded in the study about the problems that ask a better action from the authorities, specifically: sewage treatment, access to piped water, public cleaning and regular garbage collection. Such aspects appear, along with the socioeconomic profile of the population, among the five surveillance indicators for dengue developed by Flauzino, Souza-Santos e Oliveira[28].

The results are found in researches conduced in Salvador/BA, that analyzed the knowledges and practices of the population for the control of dengue and identified that, in community´s comprehension, the presence of the mosquito is related to the lack of garbage collection, improper living conditions and the lack of basic sanitation[29].

THE LACK OF INSPECTION IN WASTE LANDS AND CLOSED HOMES

In the perception of the community, another essential element for the vectorial control would be the action of the public power in a more rigorous inspection of vacant lots, waste lands and closed homes.

> *Vacant lot that starts to be a problem... for the owner to take action. If the owner does not act, we report it to the public power.* (Governador Valadares/MG).

> *The public power is leaving a lot to be desired, that way [...] Here in João Pessoa, the way things are, we feel indignant. You, for an example, have a waste land, and people love waste lands to throw their stuff, and to make the City Council come by it is really hard.* (João Pessoa/PB).

> *[...] There is no project, there is nothing that can collect this used furniture, because where is this discarded? It is discarded on the waste land and thrown on the streets and it stays there.* (Cascavel/PR).

> *There must be a law that obliges the owner to clean the land.* (Vilhena/RO).

It shall be noticed that the population perception meets the results of the evaluations of the programs of combat of the vector in Brazilian capitals

The study of Freitas et al.[30], in Belo Horizonte/MG, showed that the frequent monitoring and cleaning of those spaces,

and the creation of laws that allow the public power to enter the closed houses and land, demonstrated to be effective in the combat of the focuses of the vector and in the reduction of the incidence in the areas were they were carried out.

In a research carried out by DataSenado for the creation of the National Policy of Combat of Dengue, of Chikungunya and of Zika fever, 80% of the people agreed that the ACS should enter in property with suspicion of focuses of *Aedes aegypti*, even without the owner's authorization.

Feitosa et al.[32], evaluating the strategies of prevention in the city of Aracaju/SE, demonstrated that the real estate speculation can be a menace for the maintenance of land and closed homes for a long time, being necessary the action of the public powers, beyond the environmental control campaigns in the homes and chemical control of the focuses. Souza et al.[33] defend that the population cannot wait for those actions, being necessary that it mobilizes, pressing the authorities.

Another study, carried out in a municipality in Goiás, demonstrated that the existence of waste land is perceived by the population as a factor that favors propitious practices to the developing of larvae, such as throwing garbage and rubbish in those spaces, even when people who do that are conscious that such attitude is inappropriate and risky. That allows to comprehend that information and knowledge are not enough to develop appropriate preventive attitudes and practices when concrete conditions of the social space are not favorable[34].

The study pointed out that it is common the acknowledgment of the population that the public power neglects, in the majority of the municipalities, the actions that should be driven to waste lands, lots and closed homes. Furthermore, were not found, in the speeches of the participants, examples of mobilization in the sense of claiming such actions nor the explicit acknowledgment of the necessity of popular mobilization to press and to demand improvements from the public power.

NECESSITY OF LEGISLATION THAT ESTABLISHES FINE FOR THE NON-COMPLIANCE OF PREVENTION MEASURES

The establishing of fine appears as a belief of the population tht it is an efficient way to make people perform correctly, and with the necessary frequency, the prevention practices:

> *To establish a heavy fine, just like they do with drivers [...] Lessons are for children, to form the old, the education has to aim the pocket.* (Cascavel/PR).

> *[...] To fine those who do not care for their spaces [...] if someone has a lot and leaves it full of bush [...].* (Goiânia/GO).

> *The problem, [...] many vacant lots full of garbage [...] if the City Council established, you have a vacant lot, it is yours, it there is any dengue focus there you will be fined in 'x'.* (Governador Valadares/MG).

> *[...] They had to impose severe fines because it does not work, people go on the streets to raising awareness [...], I think that a severe fine should be imposed on those who have focus at home.* (Governador Valadares/MG).

> *[...] this fine had to be established so everyone would take care of their own house consciously, keep the street clean...* (Dois Vizinhos/PA).

Studies have found that the establishing of fines has been considered by the population, ACE and managers as an important element for the effectiveness of prevention measures[11,33]. In the study of DataSenado[31], the same proportion of the population that agreed with the entrance in closed lots, around 80%, also agreed with imposition of fines for those who do not collaborate with the combat of *Aedes aegypti*.

The results of this study follow the same direction, demonstrating that, in the population's imaginary, the fine and other punishing methods are measures that contribute

for the vectorial control, yet the studies that evaluate this type of measure do not demonstrate its effectiveness. In the evaluation of Freitas et al.[30], in Belo Horizonte/MG, the implementation of fines and other punishing measures were not considered efficient in order to improve education and to increase population´s collaboration.

CRITICISM ON THE ACTION OF ACS AND ACE

Another element that arises in the speeches s generating dissatisfaction in the population is the action of the ACE and of the ACS:

> *I cannot even remember in which month tht an agent passed by my house. It was a long time the agent passed by.* (Campina Grande/PB).

> *[...] It has been a long time that I do not welcome a health agent at home, just to give you an idea.* (João Pessoa/PB).

> *[...] To demand from the ACS the visit, because many people, want it or not, do not do it, then, people go to his/her home saying 'Look, this is wrong', it helps a bit, just a matter of information, education, data dissemination [...].* (Caldas Novas/GO).

The perception of the population regarding the action of the ACS and of the ACE is describe differently in literature, due to the fact that exist, in a few municipalities, these two types of agents and, in others, only the figure of the ACS.

In a study that analyzed the perception of the population regarding the quality of the action of the two types of agents in two municipalities in Mato Grosso do Sul, it was evident that the population thinks that the ACS should make inspections in the backyards, in addition to providing orientation for prevention[16]. In that study, the population was satisfied with the frequency of the visits, differently from the perceived by the participants of this study, especially in the North, the Northeast or Center-West.

In a research that accompanied the ACS when trying to visit 133 homes in the municipality of Rio de Janeiro, to evaluate their access to the breeding spots of the *Aedes aegypti*, were observed varied difficulties. It was concluded that a total of 27% of the homes were never visited because they are closed or because the inhabitants are never found[35]. The research of Souza et al.[29], in Salvador/BA, concluded that the difficulties to access the homes is one of the main factors that impair the realization of the work.

Perceptions on the action of the community in prevention

It is noted that the participants produced speeches in which they shown themselves as compliant to the prevention measures, but attribute to another portion of the population, particularly neighbors, the non-compliance to the measures of environmental control.

> *We take care, but if the neighbor besides doesn´t [...] all have to be aware and all have to take care.* (Campina Grande/PB).

> *[...] The population has a great deal of responsibility...I take care of my backyard, the neighbor does not [...] then, there is a lack of education, awareness.* (Goiânia/GO).

This perspective the presents itself as recognition of themselves as responsible citizen and attributes to the other the responsibility for the failure appears in all regions.

Studies point out the blaming of the population also by health professionals. Research[12] conducted in Mato Grosso do Sul, in 2011, with nurses of the Family Health Strategy, showed a dominant speech of accountability of the population due to the carelessness with the houses and private ambients, and attaching this to the lack of awareness of the individual in the construction of the collective prevention.

Study conducted in the state of São Paulo[11] used focal groups involving ACS and ACE, supervisors and participants of the population of different social classes, aiming to identify aspects that interfere in the adherence of the population to the action of those agents. Participants of different social conditions complained about the lack of care and hygiene with the house and with the backyard of the neighbors, and attribute that as a risk factor for themselves.

Descriptive and exploratory study about the challenges for the control and prevention of the *Aedes aegypti* of França et al.[23] verified that the indifference and the lack of awareness of people are the greatest challenge of the agents in their work.

None of these studies, however, highlighted, like this one did, the generalized problem in all the Country´s regions

A way of understanding this tendency can be pointed out by studies such as the one of Wermelinger e Salles[36] that the messages in the campaigns, news and official pronouncements tend to blame the victims and that is the message that stays instilled in the population. Then, if there is from the population´s side knowledge about the measures and they are applied in their homes, the problem seems to be another.

Despite that is already well demonstrated that the socioeconomic profile of the population is one of the determinants of the difficulties of control[25,26,28], it draws attention in the present study the silence of the participants regarding the damaging social conditions to the practices, such as extreme poverty, time limits of the workers to carry out such procedures frequently, or the lack of physical conditions to carry out such procedures. This demonstrates how the social vulnerability situations have been increasingly naturalized in the population's imaginary.

Another aspect that may have influenced the answers of the participants in this study, and has been pointed out by researches that analyze the campaigns and the media posture, is the one of the dissemination of the idea that the actions of prevention are, in the majority, of individual character, hiding its true collective nature, essential for an appropriate control of the vector[36]. Other studies confront with this inasmuch as they support the speech that the population is accomodated with assistentialism of the system, without considering the evident responsibilities of the public powers[12].

Another important aspect is that the population demonstrates to believe in the supervisory powers of the community agents in facing some people's posture of refusing to practice the preventive care measures in their private spaces. In the perception of the groups present in this research, there is a belief in the action of the ACS and of the ACE, but, again, arises the question of the rejection by part of the population in allowing the entrance in homes or the following of attitudes and practices proposed by them:

> *I think people do not facilitate [...] people do not allow entrance in their homes, I think it is very wrong.* (Vilhena/PA).

> *[...] there is a resident that lives alone e gives the impression that his house is full of focuses of dengue, but they* [the ACE and the ACS] *never succeed to get in there because if he is at home, he does not open, and he has this right, and if he is not there, they cannot get in.* (Cascavel/PR).

The study of Souza et al.[29]demonstrated that the ACS themselves seem to disagree of many expectations that the community has regarding their duties, and highlight difficulties of the members of the community to integrate their practices and speeches to the speeches they usually make about the importance of the prevention procedures. In contrast, many ACS seem to feel they are not obliged to execute inside the homes the measures to control the vector.

A literature review[13] demonstrated that part of the community sees the ACE as garbage collectors of the homes they visit, and there

is a certain difficulty in recognizing the ACS as professionals also responsible for surveillance actions. However, few studies bring the reflection about what, in fact, is possible to be carried out by the population, considering the daily life, physical and resource limitations by many people and communities.

The sanitary awareness and the care for the collective spaces also were significant in the speeches in the five regions. The acts of throwing garbage on the streets or in waste lands are frequently emphasized as common complaints:

> *[...] many places don't have tis awareness, end up leaving PET bottles, caps of the bottles, box of milk, everything thrown at the waste land and then, accumulates even more the focuses of the dengue mosquito.* (Cascavel/PR).

> *[...] once a week the City Council goes with the trucks to collect garbage, leaves everything clean, and on the other day it is even more dirty than it was before.* (São Bernardo do Campo/SP).

If, there is recognition of part of the population regarding the importance of sanitary education, it is also possible to see that the lack of services can bring an uncritical attitude towards the minimum service offered. In the speech of the participant, referring to the weekly collection, she seems to be satisfied: "*leaves everything clean*". The garbage collection should be daily. It is hard a small home, like most of Brazilian homes, accumulate garbage for a week, which forces the discard in the public space that, in this case, it is cleaned only once a week.

In an integrative review about knowledges, attitudes and practices of the Brazilians about dengue, the authors affirm that the high level of knowledge does not correspond to the practice of actions necessary to the reduction of the occurrence of the disease[9]. For the authors, having knowledge about the prevention measures would not be enough to change the behavior due to the lack of sanitary awareness. As a suggestion to favor its development and consequent active participation of the society, suggest the strengthening of bonds between science and common sense, valuing previous knowledge of the population, generating less vertical raising awareness strategies

Study[8] in a municipality in Pernambuco also reaffirmed the influence of socioeconomic, cultural and behavioral factors in the low effectiveness of the control programs of dengue. Then, they consider that the survey of the socioenvironmental situations shall be the primary action in planning the interventions, that shall happen in a decentralized manner, with more autonomy of the municipal programs that are closer to each local reality.

In this study, the participants also attribute inadequate behaviors to the lack of education and awareness of the other members of the community, but the speeches tend to be apart from the consideration about the influence of the socioeconomic factors in behavioral questions.

The results also indicate a change through a greater consideration of the popular knowledge's and the ways of daily life, the content of information broadcasted for the prevention of arboviruses, including the notion of collective care e and of how it is fundamental to overcome difficulties of other members of the community in the challenge that is everyone´s for the containment of the incidence of those diseases.

There is still the necessity to adjust the prevention and combat actions to the reality of each community, since the demographic, socioeconomic, educational and behavioral characteristics vary in the national territory Thus, actions and content of health campaigns, produced in a vertical and standardized manner for a whole population, do not befit with the reality of a large part of the people, and loose much of their effects.

Besides the challenges highlighted and discussed based on results obtained before the pandemic of the COVID-19, from March of 2020, the necessity of social isolation brought

even more obstacles for the prevention of arboviruses. Physical distancing and lockdown have made impossible the work of the ACS and the ACE. The visits depend on now also on the availability of equipments of individual protection for those professionals, and the residents are more reluctant in opening their door, when there is no interruption of the visits.

The epidemiological scenario has now the simultaneous transmission of the new coronavirus and of the arboviruses, generating, also, overload of the services and professionals, making it essential the incorporation of new strategies of control to be developed inside the home by the family. A possibility of efficient use of resources would be utilizing Paho´s recommendation, based on the stratification of risk, prioritizing the areas that are responsible for more than 50% of the historical cases in urban ambients[38].

Another possibility would be to take advantage of the existence of the largest public health system in the world, the Unified Health System (SUS), to implement a national coordination, trough the ACS network, with adequate actions to the inequalities and peculiarities of the territory[39]. Nevertheless, the gravity of COVID-19 has expanded as epicentre of the pandemic, provoking the attention of managers and of professionals in actions to control it. This leads to the conclusion that one of the serious secondary consequences of the sanitary crisis caused by the pandemic will be the increasing of the incidence of the arboviuses and its complications.

Final considerations

Separately, practically all the results obtained in the speeches of the participants in the workshops had already been approached in previous works, through a theoretical reflexive perspective, or through empirical lo studies, local, municipal or state. However, it seems that the present study is one of the pioneer works about the perception of the population regarding the attributions of society and of the public powers in relation to prevention actions of the arboviruses of national range.

A remarkable result was that, in spite the municipalities in the South and Southwest regions having, in general, income conditions, development and governance superior to the municipalities in the Center-West, North and Northeast, the neglect and incapacities of the public powers in providing basic sanitation and adequate treatment of the waste were reported by the participants without them noticing differences in the perception in the different regions. This is due to the fact that the selection of municipalities of this study was conditioned to the data of the LIRAa, which are the municipalities in which the situation remained stagnant or got worse, enhancing the importance of these factors.

It deserves highlighting the belief, in the imaginary of the participants in all regions of the Country, that the establishment of fines for the non-compliance of the prevention practices as one of the solutions to improve the involvement of the communities, as well as the uncritical blaming of the community, without any reflection about the social vulnerabilities and the consequent ways of daily life that hamper the execution of preventive measures. As demonstrated before, the determination of fine has already had its inefficiency proven, besides that, the social conditions of the members of the community are considered risk factors for a higher incidence.

It seems obvious that, without a better planning and execution by the public authorities of actions for the resolution of structural problems, such as basic sanitation and treatment of waste – something that would need to be of even more concern in the context of COVID-19 –, and without a reformulation of the strategies of social communication for the prevention of arboviruses, the control of those diseases will continue to be a great failure for the health system.

Collaborators

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