

Educational practices in the control of dengue: performance of agents against endemics and perception of residents

Práticas educativas no controle da dengue: atuação dos agentes de combate às endemias e percepção dos moradores

Prácticas educativas em el control del dengue: desempeño de agentes para combatir endémicas y percepción de residentes

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RESUMO

Objetivo: Analisar as práticas educativas dos ACE durante as inspeções domiciliares. **Método:** Trata-se de uma pesquisa de abordagem qualitativa, do tipo descritiva. Os sujeitos participantes foram os ACE que atuavam nos bairros selecionados e os moradores dos domicílios inspecionados. A pesquisa obedeceu aos princípios éticos e legais conforme determinação da Resolução CNS N.466/12. **Resultados:** A síntese dos discursos possibilitou chegar a duas unidades temáticas: Categoria 1. A prática educativa do ACE focada essencialmente no controle ao mosquito transmissor; Categoria 2. A mudança de hábito em relação aos criadouros do *A. aegypti*: uma lição a ser apreendida? Os resultados desse estudo apontaram que a ação educativa realizada pelos agentes durante as inspeções é focada essencialmente no controle do vetor transmissor, pautadas na transmissão de informações, sem a participação do morador neste processo, e realizadas na maioria das vezes ao final da inspeção, dissociado da prática. **Conclusão:** Entende-se que é necessário repensar a importância desta estratégia, propiciando aos ACE uma qualificação adequada para a abordagem da comunidade durante a visita domiciliar e juntos conseguirem mudar o perfil de infestação do vetor na localidade.

Descritores: Dengue; Educação em saúde; Agente de Combate às Endemias; Mobilização social.

ABSTRACT

Objective: Analyze the educational practices of ACE during home inspections. **Method:** This is a qualitative, descriptive research. The participating subjects were the ACE who worked in the selected neighborhoods and the residents of the households inspected. The research followed the ethical and legal principles as determined by CNS Resolution N.466/12. **Results:** The synthesis of the speeches made it possible to arrive at two thematic units: Category 1. The educational practice of the ACE focused essentially on combating the transmitting mosquito; Category 2. Changing habits in relation to *A. aegypti* breeding sites: a lesson to be learned? The results of this study pointed out that the educational action carried out by the agents during the inspections is essentially focused on the control of the transmitting vector, based on the transmission of information, without the participation of the resident in this process, and performed most of the time at the end of the inspection, dissociated practice. **Conclusion:** It is understood that it is necessary to rethink the importance of this strategy, providing the ACEs with an adequate qualification to approach the community during the home visit and together they are able to change the vector infestation profile in the locality.

Descriptors: Dengue; Educational health; Agent to combat endemics; Social Mobilization.

RESUMEN

Objetivo: analizar las prácticas educativas de ACE durante las inspecciones de viviendas. **Método:** Esta es una investigación cualitativa, descriptiva. Los sujetos participantes fueron los ACE que trabajaban en los barrios seleccionados y los residentes de los hogares inspeccionados. La investigación siguió los principios éticos y legales determinados por la Resolución CNS N.466 / 12. **Resultados:** La síntesis de los discursos permitió llegar a dos unidades temáticas: Categoría 1. La práctica educativa de la ACE se centró esencialmente en controlar el mosquito transmisor; Categoría 2. El cambio de hábito en relación con la cría de *A. aegypti*: ¿una lección que aprender? Los resultados de este estudio mostraron que la acción educativa llevada a cabo por los agentes durante las inspecciones se centra esencialmente en el control del vector transmisor, basado en la transmisión de información, sin la participación del residente en este proceso, y se lleva a cabo la mayor parte del tiempo al final de la inspección, disociado práctica. **Conclusión:** se entiende que es necesario repensar la importancia de esta estrategia, proporcionando a las ACE una calificación adecuada para acercarse a la comunidad durante la visita domiciliar y juntas pueden cambiar el perfil de infestación de vectores en la localidad. **Descriptor:** Dengue Educación en salud; Agente de combate para endémicos; Movilización social.

ORIGINAL

Introduction

Brazil has been registering the presence of the *Aedes aegypti* mosquito, the main transmitter of dengue, from the past decades to the present day. The vector was eradicated from the country in the 1960s, although it was reintroduced years later, and in the 1980s successive cases of the disease appeared throughout the country.¹ Since then, there have been several attempts to control the vector, although the infestation of the transmitting mosquito extends throughout the national territory, as well as the spread of the viruses that cause dengue.

A set of conditions allows the adaptation of *Aedes aegypti* to the Brazilian territory, having as its main climatic condition. The tropical, hot and humid climate of much of the country, with alternating periods of rain and drought, with temperatures reaching 40°C, increases the speed of mosquitoes' proliferation. The condition of poverty of a large part of the Brazilian population that inhabits the peripheries of large urban centers, not having access to basic sanitation actions such as the distribution of piped water and regular garbage collection, also predisposes to the maintenance of the vector mosquito in these areas. Allied to this there is an intense flow of national and international tourists who, attracted by the natural beauty of the different regions of the country, move easily to Brazilian tourist cities, enabling the spread of dengue-transmitting viruses.²

In Brazil, we currently live with the four serotypes of the disease, which consequently allows greater chances of epidemics. As of 2002, it becomes a priority for disease control actions, adopting the measures recommended by the National Dengue Control Program (PNCD), which aims to reduce *Aedes aegypti* infestation to less than 1%; reduce the incidence of the disease to 25% each year and reduce lethality to less than 1%.^{3,4}

The municipalities most likely to produce major epidemics are a priority for the establishment of the PNCD, whose actions are established in ten components, among them Entomological Surveillance and Integrated Actions in Health Education, Communication and Social Mobilization, as it is understood that mobilization of the community can have a significant impact on vector control, given that the preventive character of health education in Brazil has a strong focus on the association between behavioral patterns and patterns of disease. In this context, each citizen is expected to take responsibility for keeping their homes free from breeding grounds for the dengue-carrying mosquito.⁴

The Agent for Combating Endemic Diseases (CED) has a fundamental role in strengthening educational actions in the PNCD. It is this professional who has direct contact with citizens during the so-called control field operations to *Aedes aegypti*. Each agent is responsible for a fixed area of 800 to 1000 properties, visited in bimonthly cycles and has the basic function of discovering outbreaks, destroying and preventing breeding sites, preventing the reproduction of outbreaks and guiding the community with educational actions about the disease and its forms of prevention.¹

Although the PNCD is implemented in 45 (forty-five) municipalities considered to be priorities for dengue control, each year some of them appear on the map of municipalities on alert for epidemics. The map is prepared by the Ministry of Health, which contains the municipalities with *Aedes aegypti* infestation rates above 1%. Feira de Santana, the setting of the present study, is considered a priority and despite having a staff of 215 (two hundred and fifteen)

professionals in dengue control actions, it has been showing high rates of *Aedes aegypti* infestation and, consequently, the registration of cases of disease, including deaths.

The research is justified by its social relevance, given that dengue is a major public health problem in Brazil and worldwide. It is identified by the World Health Organization as the vector-borne disease with the highest growth worldwide, with case records in more than 100 countries.⁵ The motivation for the study can be translated by the participation of the researchers in the dengue control actions in the municipality chosen for the research.

In view of this situation, the question arises: Why, after so many years of implementation of the PNCD, with the maintenance of bimonthly cycles of visits by the CED to the properties, having direct contact with the reality of the residents, it has not been possible to change the habits of the population in relation to maintenance of breeding grounds for dengue mosquitoes in the home environment?

In this sense, the present study aimed to analyze the educational practices of the CED who work in a specific location in the municipality of Feira de Santana - Bahia, during home inspections, and with a view to the perception and performance of the residents regarding the control of *Aedes aegypti*.

Educational practices and dengue control

Dengue is considered an arbovirus of greater relevance in the world today, with about 2.5 billion people living in countries where the disease occurs endemically.⁶ The records of the disease have shown an increasing trend in recent years in the country, reflecting the difficulties in controlling this endemic disease by the health authorities, demanding great advances in the attempt of more satisfactory results of the Control Programs of the *Aedes aegypti* vector. Its importance is related to morbidity, mortality and the need for several strategies for its control.³

Dengue has been occurring in Bahia and Brazil continuously, with the circulation of the four serotypes, despite the intense performance of vector control programs and remaining endemic in some Brazilian states. This maintenance of endemicity is explained by the fact that the conditions of transmission of dengue are limited after an epidemic period to certain population groups and their respective geographical areas and in the post-epidemic, a gradual reduction in vector control practices is observed, reflecting in the maintenance of disease production/reproduction conditions.⁷

In Brazilian scenario, there are still socio-economic inequalities; economical and political crisis; demographic and behavioral changes in chronic diseases affecting increasingly young populations; population aging, in addition to changes in environmental conditions. Related to this, there is an unbalanced urbanization process with garbage accumulation and insufficient sanitation and urban cleaning services. Another relevant factor is that Brazil has a period of climate change that makes the mosquito that transmits dengue find favorable conditions for its growth.⁸

The *A. aegypti* mosquito, a vector adapted to the home, uses several types of breeding sites, having domestic habits, preferably biting during the day and with an anthropophilic habit.² It has an affinity for urban areas, proliferating in the most diverse containers, usually introduced into the environment by man, such as abandoned old tires, bottles, potted plants, gutters, swimming pools,

among others, and its control is an important challenge. by the authorities, mainly, with regard to the access of CEDs to private and closed properties. At times, CEDs are prevented by residents from carrying out their actions in these homes.⁹

The operationalization of field work carried out by endemic agents for the control of dengue should emphasize educational actions during visits to residents of inspected households. This activity aims to make the resident / owner of the property a partner in the fight against *A. aegypti*.

In this study, educational actions are understood as those developed by the CED and recommended by the program as the orientation actions transmitted to the resident about vector control in order to raise awareness of the importance of being a transforming agent of their reality, contributing in reducing the damage in your neighborhood and/or community.

Another action performed by the vector control CEDs includes chemical control, through the use of chemical or biological products, called focal treatment and consists of the application of larvicide in deposits considered positive, that is, that contain the immature phase of mosquitoes. that cannot be eliminated mechanically. Peripheral treatment, which involves the use of insecticide on the outer walls of water deposits, and treatment with dispersion of insecticides in ultra-low volume (UBV), refers to the spatial use of insecticide at very low volume, being restricted to use in epidemics, as a complement to the action, promoting the rapid cessation of dengue transmission in the locality.¹⁰

Although dengue control actions contain a large number of CED operating since 2002, with the implementation of the PNCD, there has been no integration between the professional practice of these servers with the perception and assimilation of educational messages by residents during field actions. The population does not seem to assimilate the importance of incorporating control activities into the transmitter vector in their daily lives⁵, either following the guidelines passed on by the CED when they enter their homes, or absorbing information from other media such as the media, Internet, among others.

There is a need to improve the organization of the health system's response to epidemics, requiring efforts to mobilize managers and the community, with a permanent process of continuous training of health professionals. Health surveillance services need to be attentive to the trends of these diseases in order to detect changes in their profile and guide timely prevention and control actions.⁸

The PNCD is implemented in all Brazilian municipalities, and it is foreseen to use basically three types of control mechanisms: mechanical, biological and chemical.¹¹ Among the program's components, educational actions stand out as the main tool that aim to encourage the change in society's behavior and the adoption of practices aimed at maintaining the preserved home environment from *Aedes aegypti* infestation, as well as stimulating citizenship and inclusion of community in health action decisions in dengue control.¹

Avoiding dengue depends fundamentally on changing the habits and behaviors of the population in the home environment, workplaces, schools, among others. It is necessary that the community be involved in actions to control the transmitting vector throughout the year, not only in endemic periods. These actions encourage the mobilization of the population based on existing social organizations.¹

Thus, there is a need to incorporate new educational approaches, using a dynamic that is easy to understand, in addition to greater continuous dissemination of dengue in order to sensitize the community in control actions.

Method

This is a qualitative, descriptive research. We opted for this type of research because it is believed that it is the one that best answers the guiding questions, because it allows researchers to get closer to the phenomenon and the reality experienced by the subjects of the study and because all attention is focused on the social context where the event occurs.^{12,13}

The study field was the municipality of Feira de Santana, the second largest in population in the State of Bahia, headquarters of the Macrorregião Centro Leste and with a fluctuating population of more than one million inhabitants.¹⁴ It has been presenting records of dengue cases since the 1990s and, in 1995, it experienced the first epidemic in its territory. Since 2002, the municipality has been considered a priority for disease control actions and has been adopting the measures recommended by the PNCD.¹⁵

The Municipal Dengue Control Program currently has a staff of 215 (two hundred and fifteen) agents of endemic diseases. Although, for some years, the municipality managed to carry out the six annual cycles of home visits, recommended by the Ministry of Health, the servers have currently carried out four annual cycles, mainly due to the incipient number of CED acting in the control actions and the number high number of properties in the municipality.

As a consequence of this, there is an increase in the number of neighborhoods with a Building Infestation Index (IIP) above 1%, defined by the Ministry of Health as the percentage expression between the number of positive properties and the number of properties surveyed, signaling the infestation of immature forms of larvae and pupae.¹

The most found positive breeding sites are small reservoirs for the accumulation of water for domestic use, such as pots, vats, among others. The practice of accumulating water is due to the fact that in some neighborhoods the water supply is irregular, reaching the taps only at night, which makes the population prevent the lack of water for daily activities.

Given this context, the eight neighborhoods with the highest PII in the last three cycles of field operations were selected for the study. The choice of subjects participating in the study was made intentionally, constituting two social groups, with Group I being the CED who work in the selected neighborhoods (08 subjects) and Group II the residents of the households inspected by the CED (20 subjects).

For data gathering, a semi-structured interview was used, guided by a specific script for group II with open questions on the research topic. The interviews conducted from May to June 2013 were recorded with the consent of the participants, ensuring their privacy, secrecy and anonymity. Thus, the interviews were identified, in the order in which they took place and received the following denomination: Ent. 1; Ent. 2 ..., and so on.

The systematic observation of the practice of CED during home inspections was recorded in a field diary. The data were analyzed based on the Content Analysis technique. The research was submitted to the Research Ethics Committee of the State University of Feira de Santana (UEFS) and was approved

by Opinion No. 194.708 in compliance with Resolution 466 of 2012 of the National Health Council.¹⁶

Results and Discussion

After the transcripts of the interviews, an analytical chart was built with the main units of meaning contained in the subjects' statements. Then, we tried to identify the convergences, divergences and differences of the speeches.

The synthesis of the speeches made it possible to reach two thematic units: Thematic Unit 1. The educational practice of the CED focused essentially on controlling the transmitting mosquito; Thematic Unit 2. Knowledge of residents about dengue: the media as the main source of information.

The first thematic unit reveals that the action of the CED in the visit to the properties has a very large focus in the search for positive breeding sites for *Aedes aegypti*, in the treatment and elimination of these. The CED carries out the inspection work focusing essentially on the control of the vector mosquito, without the participation of the resident in this process, although this agent is one of those responsible for transmitting health information in the prevention of the disease. The agent enters the house, inspects the rooms in search of focused deposits, and, if he finds them, communicates to the resident, most of the time at the end of the inspection. There is no focus on the need for this resident to understand the seriousness of such a situation. This was verified by observing the work of the CED, during data collection by one of the authors of the research and also noticed in the statements below:

“It scans all tanks, toilet drain, guides you to keep tanks covered...” (Ent. 5).

“He enters, looks at everything, looks at the vases, puts the medicines...” (Ent. 1).

“He only really does looking, searching the yard, if anything, put medicine in the boxes”. (Ent. 4).

The participation of the resident during the visit of the agent to his home is recommended by the Ministry of Health in the methodology of inspection of properties¹ and this moment is of great importance in the control of dengue, not least because a vector so adapted to the domestic environment will not be sufficiently combated only with chemical control, without intersectoral integration and without the participation of the population.¹⁷

In Thematic Unit 2, it is discussed whether the population incorporated the information about dengue passed in the successive visits of the CED to their homes and whether these were important in changing habits regarding the maintenance of possible breeding sites for *Aedes aegypti*. The study revealed that the residents' knowledge of dengue was indeed contributed by the performance of the CED, however, the greatest contribution is made by the television media and that both situations were not sufficient to promote the change of habits of the residents in relation to the potential breeding sites of the mosquito.

“I started cleaning the yard properly, not leaving any accumulated water. After the visit we started to look better” (Ent.10).

“I was more attentive to things that can generate breeding grounds for dengue ... I always took care of myself, but with alert from the agents it got better” (Ent. 18).

“I know that dengue is a dangerous disease that can kill ... we see it on television ... what he (CED) goes through is just guiding what we already know” (Ent.3).

“The agent speaks, but so does television. I learned a little of each one” (Ent.9).

The interviewee's speech 3 demonstrates the real dimension of the power of television media as a source of knowledge about dengue prevention, even though residents recognize the educational role of CED. The interviewees' reports show that the residents have knowledge about dengue, however, still restricted to controlling the vector, with the contribution of the CED's performance to their homes, however, the greatest contribution is made by television media and that both situations are not were sufficient to promote a change in the habits of residents in relation to potential breeding sites in the mosquito.

This reality translated in the above narratives reinforces the importance of carrying out health education by the CED during inspections, even if in an objective and punctual way. On the other hand, it suggests a revision of the educational action methodology, so that new forms of approach are dynamically incorporated, in addition to being carried out continuously and permanently.

In the field observations, we found that this information passed on by the CEDs, during visits, was limited to the prevention and elimination of breeding sites, in addition to being transmitted at the end of the inspections, which represented little meaning, when not associated with the practice. carried out by the CED. This is an important aspect to be analyzed, as it reveals the lack of involvement of the resident in the educational action during the inspection of the agent, since the program methodology currently recommends that this activity be carried out with the participation of the subjects, so that this moment represents the exchange of experiences, valuing the resident's prior knowledge, in addition to discussing appropriate solutions and alternatives for solving problems related to dengue.

Thus, it is understood that this exchange manifests itself with the recognition of the different knowledge involved initially, through listening to the other, so that this moment can promote the change of behavior of the population, perceiving themselves as a subject in the context of transformation of their reality.

Conclusion

It is understood that it is necessary to rethink the importance of this educational action, providing the CEDs with an adequate qualification to approach the community during this special moment of contact with reality. The forms of approaches must be based on the knowledge of the population, considering their social context, as well as their forms of organization, thus guaranteeing the participation of society in the fight against this scourge that continues to haunt large populations and claim many lives. The fight against the dengue vector will only be successful with the participation of the population duly mobilized for its control and prevention.

We emphasize, however, the need for health education actions to be established in a dialogical manner, enabling greater community interaction, that is, that it is not only a listener of information passed on by health agents, but that it can also express its concerns, health concerns and needs.

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