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# PEDAGOGICAL WORKSHOP IN THE KNOWLEDGE CONSTRUCTION ABOUT ARBOVIRUSES

# OFICINA PEDAGÓGICA NA CONSTRUÇÃO DE CONHECIMENTOS SOBRE ARBOVIROSES

# TALLER PEDAGÓGICA EN LA CONSTRUCCIÓN DE CONOCIMIENTOS ACERCA DE ARBOVIRUS

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Objective: to describe the use of a pedagogical workshop as a space for construction, reflection, and problematization of reality. Method: it was an experience report, in which a pedagogical workshop about dengue, zika, and chikungunya took place with ten students from the Biological Sciences undergraduate course of the State University of Southwest Bahia, Brazil, in May 2016, with the application of a pre-test and a post-test. Results: the group presented knowledge on the subject, demonstrating it was not something new, given the dissemination through the media. It was verified the need to clarify the differences in signs and symptoms, and reinforce some preventive measures, which were addressed during the intervention. Conclusion: the workshop contributed to propagate the knowledge on the theme and enabled to support the theory-practice association based on a lived reality that needed to be addressed, thus driving participants to become social actors in this process.

Descriptors: Dengue. Zika Virus. Chikungunya Virus. Knowledge.

*Objetivo: descrever o uso da oficina pedagógica como um espaço de construção, reflexão e problematização da realidade. Método: relato de experiência. Foi realizada uma oficina pedagógica com dez estudantes do curso de Licenciatura em Ciências Biológicas de uma Universidade Estadual do Sudoeste da Bahia, Brasil, em maio de 2016, sobre a temática dengue, zika e chikungunya, com a aplicação de um pré-teste e de um pós-teste. Resultados: o grupo possuía conhecimentos acerca do tema, demonstrando não ser algo novo, devido à divulgação por meios de comunicação. Observou-se a necessidade de esclarecimentos quanto à diferenciação de sinais e sintomas, e reforço em algumas medidas preventivas, o que foi abordado no decorrer da intervenção. Conclusão: a oficina contribuiu para a propagação de conhecimento sobre a temática, permitiu fomentar a associação teoria-prática com base em uma realidade vivida que precisava ser trabalhada, inquietando os participantes a serem atores sociais nesse processo.*

*Dengue. Zika vírus. Vírus Chikungunya. Conhecimento.*

*Objetivo: describir el uso del taller pedagógico como espacio de construcción, reflexión y problematización de la realidad. Método: relato de experiencia. Se realizó un taller pedagógico con diez estudiantes del curso de Licenciatura en Ciencias Biológicas de una Universidad Estadual del Sudoeste de la Bahía, Brasil, en mayo de 2016, sobre*

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*la temática Dengue, Zika y Chikungunya, con aplicación de pre-test y de post-test. Resultados: el grupo poseía conocimientos sobre el tema, señalando no ser algo nuevo, debido a la divulgación por medios de comunicación. Hubo necesidad de aclaraciones sobre la diferenciación de signos y síntomas, y refuerzo en algunas medidas preventivas, lo que fue abordado durante la intervención. Conclusión: el taller contribuyó a la propagación del conocimiento sobre la temática, permitió fomentar la asociación teoría-práctica con base en una realidad vivida que necesitaba ser trabajada, inquietando a los participantes a ser actores sociales en ese proceso.*

*Descriptores: Dengue. Virus Zika. Virus Chikungunya. Conocimiento.*

## Introduction

Dengue, zika, and chikungunya are among the most relevant arboviruses (vector-borne diseases) in the modern world. These are emerging diseases that constitute a public health problem. Thus, knowing them and instituting preventive measures in a timely manner are imperative actions in the control of these diseases. Arboviruses have become relevant and constant threats in tropical regions due to rapid climatic changes, deforestation, population migration, disorderly occupation of urban areas, and precarious sanitary conditions that favor virus amplification and transmission. They are transmitted through the blood of viremic patients by the bite of hematophagous insects[1].

Brazil is in a predominantly tropical area, with great territorial extension, extensive forests in the Amazon Region, as well as forests in the East, Southeast, and South coast. It also has a large wetland area (Pantanal) in the Midwest, a savanna region (Cerrado) in the Brazilian Highlands, and a dry tropical forest (Caatinga) in the northeastern interior. Most of the country presents a tropical climate, constituting a suitable environment for the vector and, consequently, for the occurrence of arboviruses[1-2].

Dengue is an arbovirus whose etiologic agent is part of the genus Flavivirus belonging to the family *Flaviviridae*, and it is transmitted through the bite of an infected mosquito. There are two species of mosquitoes that can transmit dengue: *Aedes aegypti* and *Aedes albopictus*. Dengue transmission occurs by the bite of the female *Aedes aegypti*, in the human-to-mosquito-to-human cycle. The mosquito becomes able to transmit the virus after 8 to 12 days of incubation post infected blood feeding. It is worth mentioning that there is no transmission by direct contact with the patient or with their secretions[3].

There are two clinical forms for the disease: Classical Dengue or Dengue Fever (DF) and Dengue Hemorrhagic Fever (DHF). DF presents a clinical picture characterized by fever associated with headache, vomiting, and body pains. DHF initially presents clinical symptoms like DF, but these rapidly evolve to hemorrhagic manifestations, such as high fever, hemorrhagic phenomena, hepatomegaly, and circulatory insufficiency, as well as thrombocytopenia[2].

Zika fever is an infection caused by the Zika Virus (ZKV) and is also transmitted by the mosquito *Aedes aegypti*. Brazil reported the first cases of this infection in 2015, in Rio Grande do Norte and Bahia[1]. After biting someone infected, the mosquito can infect a person with the ZKV during its life, transmitting the disease to those who do not have antibodies against it[4].

Chikungunya fever is another disease transmitted by the mosquitoes *Aedes aegypti* and *Aedes albopictus*. The main symptoms are high-onset fever, severe joint pain in the hands and feet, in addition to the fingers, ankles, and wrists. Other symptoms include headache, muscle pain, and rash. It is not possible to have chikungunya more than once; after infected, the person becomes immune for life. Onset of illness occurs between 2 and 12 days after the mosquito bite, which acquires the CHIKV by biting an infected person during the period when the virus is present in the infected organism. About 30% of the cases do not present symptoms[5-6].

There is no specific treatment for the abovementioned diseases, which means that the treatment for these arboviruses is only symptomatic. To limit viral transmission, the individual should be kept under mosquito nets during the feverish state, avoiding being bitten by the vector, which would then become infected and transmit the disease(s) to other people[4,7].

Dengue, zika, and chikungunya are associated with the socioenvironmental conditions that promote the maintenance and dispersion of the vector. Transmitting mosquitoes reproduce in places that accumulate still water, such as tires, outdoors junkyards, cans, bottles, plastic containers, and empty lots. After eradicating the breeding sites, elimination of mosquitoes should take place through insecticide use, especially during the transmission season, and community support[3].

To fight these arboviruses, health education becomes essential, replacing merely campaign-based practices. Additionally, changes in education and communication practices are crucial to achieve success, since those carried out to control these arboviruses are characterized by the centralized, vertical, and unidirectional hegemonic model, guided by the knowledge diffusion.

On the other hand, the workshop technique aims to propagate and provide health clarification through a dialogue-based and participatory lecture, to stimulate the empowerment of participants to adopt healthy habits and socially recommended behaviors. Thus, it is believed that the fight against the outbreak of dengue and other arboviruses in Brazil can be carried out through horizontal work, with health education as one of the most relevant strategies for achieving success[2-3].

Therefore, regarding health education, it is believed that workshops are very useful tools in the teaching-learning process and, consequently, in stimulating changes in practice. Pedagogical workshop is understood as a group work methodology, characterized by the collective construction of knowledge, analysis of reality, confrontation, and knowledge exchange[8].

Students and educators see workshops differently. While workshops constitute an instrument capable of providing pleasure and motivation for the students in the learning process, educators view them as a means, a suitable technique to conduct the teaching-learning process. In this context, they are used for sharing knowledge[2].

Furthermore, workshop is a way of building knowledge focused on action, without losing sight of theory. It also involves cooperation resulting from reduced distances between educators and students, leading to their transformation. This possibility can be implemented in the school context, especially in the space for knowledge construction in pedagogical workshops[9].

For this reason, this technique promotes a space for reflection and action aimed at bridging the gap between theory and practice, between knowledge and work, and between education and life, seeking to drive participants to adopt more active postures in coping with everyday problems experienced. In this sense, implementing a workshop to approach issues related to human health has a preventive and health promotion aspect, since this action increases the knowledge of a certain group about the pathologies in which they might intervene[10].

In this perspective, this work aims to describe the use of a pedagogical workshop as a space for construction, reflection, and problematization of reality.

## Method

This is a descriptive study presenting an experience report from students of the 2016.1 class of the Postgraduate Nursing and Health Program, at the Master's Degree level, from the State University of Southwest Bahia (UESB), Brazil, Campus of Jequié, through a pedagogical workshop.

The workshop was guided by two professors and conducted by three students of the Academic Master in Nursing and Health, State University of Southwest Bahia. The subject was chosen by the Master's students, based on the premise of being

relevant and dealing with current issues in the health scenario. Therefore, the theme "Dengue, zika, and chikungunya" was suggested, being approved by the professors, since it was thought based on epidemiological data that demonstrate how much these arboviruses affect the quality of life of many Brazilians, representing an important public health problem to deal with[11].

In this context, choosing the topic of study is a determining factor for preparing a workshop. As strategies to achieve this work perspective, it is important to follow these steps: decide the topic of study, which concerns the choice made by those proposing to develop a workshop; collect every data possible on the subject, seeking support in materials such as journals, movies, books, but also in everyday conversations; understand that the topic will be approached through the study and the development of strategies to enable the discussions, which can refer to any means available or possible to be created. Workshops also have the characteristic of creating learning spaces that seek dialogue among the participants[7].

The workshop in study was organized for one of the daytime classes of the Biology undergraduate course. The class selected was in the fifth semester of Biology, which was being prepared to begin the internship in the classroom of municipal schools, thus being understood by the group with potential to multiply the contents to be approached. The undergraduates were previously invited by a common professor, who teaches for the Biology and the Masters course, being scheduled for May 30, 2016, from 8:00 to 12:00, in room I of Biology, at the UESB. The class comprised 14 students, of which only 10 were present and voluntarily accepted to participate in the workshop, without acquiring any benefits, besides becoming familiar with the subject under discussion.

The workshop was guided by a script constructed and planed in weekly meetings of the discipline Teaching-Learning Process in Health Sciences (TLP), which aims to promote the learning process among students, while being an instrument of interdependence in the teaching context. This script contained all the steps of the workshop: the subjects to be approached; those responsible for guidance; the didactics to be used for transmitting each content; and the time demanded for each stage scheduled.

This way, the workshop was designed to analyze the data based on the experience of the applicability of active methodologies – implementing the teaching-learning process proposed by the discipline – working with the data obtained from the dialogical relationship with the students. The proposed methodological resources were also used, such as: integrated panel, which served as a pre-test for students to express their knowledge about the topics, and dialogue-based expository lecture, aiming to offer information and theoretical differences in signs, symptoms, and prevention of these diseases. At the end, a post-test on the subject and workshop assessment took place to verify the results obtained. The post-test questionnaires and the evaluation sheets were anonymous, to avoid any constraint or biased results.

Integrated panel is a methodological strategy characterized by the informal discussion of a group of students interested or affected by the problem addressed. It can also be used to introduce a new subject, integrate a group, favor the integration of concepts, ideas or conclusions, obtain the participation of all, familiarize the participants with a certain subject, among others[12]. Dialogue-based expository lecture presents a partnership between professors and students in approaching the subject, stimulating educators to act significantly, with responsibility and autonomy, in the search of knowledge construction[13].

## Results and Discussion

The workshop started with a presentation dynamic, in which the participants chose some personal object with which they identified themselves and, through it, brought up their characteristics, ending the speech with their expectations for the workshop. The whole group was very receptive, expecting to acquire

new knowledge about arboviruses and clarify their doubts on the subject.

Next, the integrated panel was developed, consisting of a table containing three columns related to each of the infections (dengue, zika, and chikungunya) correlated with lines presenting the following characteristics: how to acquire, vector, signs and symptoms, and treatment. This technique was adopted to identify the participants' previous knowledge about the topic addressed, serving as a pre-test for the workshop evaluation.

The panel construction revealed that the group had previous knowledge about the subject, not being something new for them, both for having already seen it on television, and for personal research on web search engines. Only the need for clarification regarding the differences in signs and symptoms was observed, as well as reinforcement in some preventive measures, which was addressed during the intervention.

Following, the workshop continued with the dialogue-based expository lecture, beginning with the aspects related to the vector – life stages and behavior –, elucidating what are arboviruses. An illustrative video was then presented. The workshop went on with a speech on dengue, zika, and chikungunya, addressing aspects such as transmission, pathophysiology, signs and symptoms, treatment, and epidemiology, always with the group participation, by raising doubts, reflections, and inferences in everyday life.

Current epidemiological data, from 2015 to April 2016, on the occurrence of these pathologies at national and state level were presented, arousing the interest of the participants, making them reflect on their reality and the implications of this issue on their lives, including reports of relatives who have suffered from the conditions approached or having themselves been affected by these diseases.

Throughout the workshop, there was a process of knowledge exchange, not only for transferring technical content, standards, and protocols, but also for considering the experiences of individuals and their professional and personal background[14].

After this lecture, another video was presented to reiterate what was exposed, summarizing the main characteristics of the pathologies studied. Later, the participants received a questionnaire with six multiple-choice questions (post-test), along with the workshop assessment sheet, and were given some time to answer them individually. The post-test contained questions about the vector mosquito (one question), dengue (two), zika (one), and chikungunya (two). It showed that 80% (8) of the participants answered at least half of the questions correctly, indicating the clarification provided by the content addressed and the good understanding by the group.

The evaluation form contained three questions. The first sought to indicate the degree of satisfaction (dissatisfied/satisfied/very satisfied), regarding eight aspects: program content; date and time; didactic material; format and methodological strategies; organization of time; posture and knowledge of the speakers; opportunity to express themselves; and the ability to solve or mitigate unforeseen events. The second addressed the evaluation score of the workshop, ranging from 1 (minimum grade) to 5 (maximum grade). And the third consisted of two open questions, in which the participants dealt with aspects that they considered useful about the issue approached for their professional training, and those that were not discussed but could be useful.

Most of the participants indicated the degree of satisfaction as "very satisfied" and "satisfied" for all the mentioned items. Only two dissatisfactions were registered and referred to the organization of time, which can be explained by the fact the workshop lasted an average of two uninterrupted hours. 80% (8) of participants assigned the maximum score to the workshop, and two participants gave it 4 points, demonstrating that the intervention was well evaluated by the group.

Regarding the last question, on the usefulness of the workshop for their training, they unanimously acknowledged it as a current and pertinent topic, as it affects everyone, allowing to resolve doubts, besides enabling the knowledge

acquisition about epidemics and public health. In the item dealing with insufficiently discussed aspects, eight participants indicated their absence and two reported that there should have been a greater focus on the virus, although one of them acknowledged that, despite feeling this need, this would not be the workshop focus.

At the end of the workshop, a parody on the mosquito and the transmission of these diseases was made for relaxation and to dismiss the group.

## Conclusion

It was concluded that the workshop was successfully carried out, having achieved its goal of promoting a space for construction, reflection, and problematization of reality through dialogue-based expository lectures. The group participated actively, interacting from the initial questions to the conclusion of the workshop. This experience also enabled the students of the academic masters to teach and verify, in a practical experience and as educators for citizenship, how to create spaces for construction, reflection, and problematization of reality.

The reflection generated by the need for changes in practices and dissemination of knowledge to the community was evident in the participants, who felt closely involved with the problem addressed, as it was part of their daily life. Thus, the present intervention contributed to promote, in addition to the theory propagation, a theory-practice association with a lived reality that needed to be approached.

In this perspective, it is imperative to encourage the change of practices through discussion, rather than a mere content transmission, especially in cases such as the object of work, in which its agents (dengue, zika, and chikungunya) constitute public health problems that depend on individual intervention for its control. Moreover, it was important to stimulate those involved in this process to understand that the fight against these arboviruses also requires strong public management action, through basic sanitation actions alongside the efforts of each citizen.

This study, although relevant, was limited by the fact it was addressed to a small population. Therefore, there is need to conduct further studies that use this type of methodology as a technique, to facilitate the discussion of topics relevant to society, bring clarification, and generate reflection on the need to adopt practical attitudes in everyday life, applying the knowledge acquired.

## Collaborations

1. conception, design, data analysis and interpretation: Ana Cristina Santos Duarte, Geslaney Reis da Silva and Valéria Marques Lopes;

2. drafting of the article, relevant critical review of intellectual content: Priscila Meira Mascarenhas, Maílla dos Santos Silva and Rita Narriman Silva de Oliveira Boery;

3. final approval of the version to be published: Ana Cristina Santos Duarte.

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