

Dengue control: the relevance of transdisciplinary interaction

Controle do dengue: importância da articulação de conhecimentos transdisciplinares

Control de dengue: importancia de la articulación del conocimiento transdisciplinario

Teixeira, Maria Glóriaⁱⁱ

^I Professora Associada, Instituto de Saúde Coletiva, Universidade Federal da Bahia. <magloria@ufba.br>

Since the 1980s, Brazil has been confronting expressive difficulties in controlling infections caused by the dengue virus. Despite the application of considerable resources in programs aimed at combating *Aedes aegypti*, the only vector of the dengue virus in the Americas, this mosquito continues to proliferate extensively and persistently, and is currently present in over 70% of Brazilian municipalities. As the vector disseminated, three serotypes of the dengue virus (DENV1, DENV2 and DENV3) began to circulate with surprising intensity in the large and smaller urban centers of the country, producing successive epidemics of elevated magnitude. These epidemics are increasing in severity as a result of the rise in the incidence of cases of dengue hemorrhagic fever (Teixeira et al., 2005). The progressive course in the epidemiological status of the disease, together with the results of the impact evaluations on the actions implemented in the Brazilian program of dengue control, has demonstrated the ineffectiveness of these actions (Dias, 2006; Teixeira et al., 2002). It is important to remember that difficulties in controlling infections resulting from the dengue virus have been confronted

not only by Brazil, but by the majority of nations, even countries with programs considered models in terms of coverage and quality (Ooi, Goh, Gubler, 2005; Tauil, 2002). This is evidence that the scientific data available on prevention remains insufficient to assure adequate control of this virus. Furthermore, no specific medication is available for individuals infected by the dengue virus and no safe, effective vaccine exists for use in populations. Control of this virus up to the present moment has centered on combatting its vector, the only vulnerable link in this epidemiological chain.

The current state of affairs is proof that dengue represents one of the major public health issues in Brazil today. For this reason, in addition to research aimed at developing products, techniques, innovations and inventions to eliminate and/or eradicate this disease, efforts must also be directed and resources invested in studies designed to improve currently available technology and strategies for controlling the disease in order to improve the efficacy of the actions of current programs of vectorial combat.

I would therefore like to compliment the author and the editors of this journal for their initiative in fomenting debates on this important topic by discussing the issues and the perspectives for promoting the educational and social mobilization components of dengue control programs. Considered a cornerstone for the sustainability of actions of vectorial combat by a practically universal consensus, the actions implemented by these components will only become effective if they are continuous, permanent and capable of promoting environmental modifications that will suppress the proliferation of a mosquito-vector of anthropophilic habits, totally adapted to the environment inhabited by man (Consoli, Oliveira, 1994).

The article “Education, communication and mobilization within the perspective of dengue control: innovative proposals” discusses the results of evaluations conducted on some of the activities and actions developed in this field in Brazil and in other countries, clearly outlining the difficulties

and limitations of the education, communication and mobilization strategies currently implemented. Supported by scientific evidence, the author discusses the need to change the manner in which resources are applied, emphasizing the inadequacy of the explicative model on which the strategies currently in use have been based. She criticizes the fact that the objective of these strategies is to encourage the population to combat the vector, subconsciously supporting the single cause view of the disease and, in most cases, maintaining the campaigner/hygienist position. Tactics such as those used by the former “sanitary police” continue to be replicated, as reflected in the “educative” discourse of the Community Endemics Agents, the professionals responsible for carrying out house-to-house visits. In addition to these practices, there are also periodic campaigns circulated in the electronic and printed media with the objective of informing the population with respect to the cycle of the disease, indicating attitudes and practices that should be adopted and/or avoided in order to reduce the availability and/or persistence of breeding grounds within the domestic environment. According to the evaluations discussed in the article and to the statements given by technicians and directors of programs of vectorial combat, these strategies have failed to obtain the desired effect, since the majority of the population indeed absorbs the information, i.e. they know the sites of oviposition, they know that they should get rid of recipients containing water, they are aware of the need to cover reservoirs that cannot be eliminated, etc.; nevertheless, this knowledge has proven ineffective, in that it has failed to result in changes in practices or behavior. Therefore, domestic environments continue receptive to the maintenance and proliferation of *Aedes aegypti*.

One of the possible reasons for the difficulties in controlling dengue lies in the prescriptive character of this principal activity, i.e. the house-to-house visits aimed at eliminating foci and possible potential breeding grounds of the larvae of this mosquito. During house visits, Community Health Agents measure and weigh children, instruct parents on oral rehydration salts and/or

administer this therapy, schedule doctor's consultations and deliver and/or administer medication; whereas the visits by the Community Endemics Agents take on a distinctly different connotation. The activities carried out by these agents consist of interventions within the family's personal space, often discarding objects, interfering, criticizing and even condemning certain habits that may be culturally important to the family, such as the use of vases for religious or decorative purposes.

The author recognizes the importance of the actions and activities involved in communication and social participation and she emphasizes the need to develop new strategies in this field. In parallel, she reviews the fact that "[...] the power of these practices in producing or inducing changes in behaviors and attitudes is in fact only moderate, particularly within contexts that are so hostile to the protection and promotion of health. Communication, education and social mobilization are areas of action that are crucial for the success of programs of prevention and health promotion, more with respect to their capacity to create opportunities for dialogue and conversation between professionals, healthcare agents and the general population in search of a solution to the problems that affect them rather than for their potential to change individual behaviors and attitudes with respect to health risks".

We agree that it is necessary to demystify the discourse that communication, education and social mobilization alone are capable of producing changes and managing health issues, particularly those involving domestic habits. In addition to communication, education and social mobilization, all the other components involved in programs of dengue control should be structured and of excellent quality, specifically in epidemiological surveillance, in the chemical, physical and biological combat of the vector, in entomological surveillance and, principally, in promoting actions of basic sanitation, such as adequate garbage collection, an uninterrupted supply of good quality drinking water, adequate sewage system, public cleansing, etc.

With respect to the communication, education and social mobilization component, it is clear that for any progress to be made, special techniques and strategies have to be implemented that are innovative and meet with the approval of the population. This approval has to be obtained in each particular location, taking into consideration the culture, privacy and interpersonal relationships of each community and of each individual at any given moment in time. To do so, studies and qualitative research capable of recognizing beliefs, attitudes and modes of behavior will be fundamental in permitting new forms and different processes to be identified that will result in an effective and powerful new tool.

From this perspective, the time may now be right for conducting controlled intervention studies using both qualitative and quantitative methods to evaluate adherence and changes in behavior and to assess the entomological and epidemiological impact. Such studies, in conjunction with direct actions to combat the vector based on currently available scientific techniques (environmental sanitation, chemical, physical and biological eradication, etc.), should include innovative approaches towards managing house-to-house visits. One proposal is to transform residents into participants responsible for the actions of eliminating and treating hatching grounds within their homes. In addition, the simple inclusion in school curricula of information on disease cycles and forms of control has so far failed to result in any changes. Perhaps encouraging students and teachers to develop concrete systematic prevention practices in communities would generate a more satisfactory effect.

It is important to emphasize that the articulation of transdisciplinary research projects involving anthropologists, sociologists, educators, epidemiologists, entomologists and other professionals may help contribute towards the development of strategies capable of creating an impact on the occurrence of infections produced by the dengue virus.

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ⁱ Address: Rua Basílio da Gama s/n, Campus do Canela, Salvador, BA. 40.110-060.