



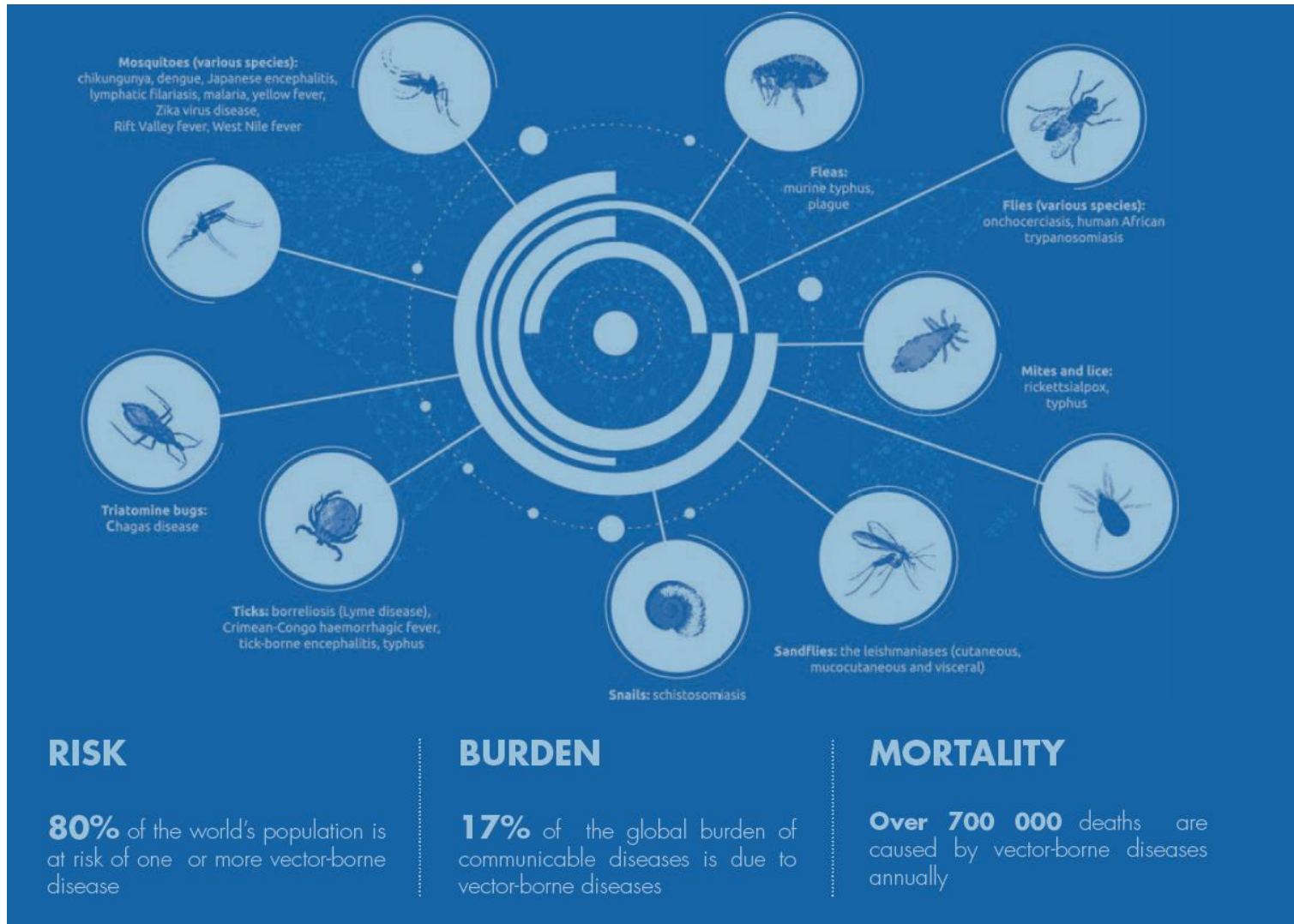
Contribution of social sciences to vector control

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Context

- Regardless of whether they involve humans and animals (mosquitoes, flies, ticks, fleas, bugs) or plants (lepidopteran and dipteran pests colonizing fruits), arthropods are often perceived negatively
- Humans should therefore support interventions tackling arthropods vectors
- However, malaria, dengue and other arboviral diseases are still present and continue to threaten public health

Burden of VBDs



- 80% of the world's population is at risk of one or more VBDs
- 17% of the global burden of communicable diseases is due to VBDs
- Over 700 000 deaths are caused by VBDs annually

Main goals of vector control

- Prevent the propagation of the vector population
- Remove the current vector population
- Reduce human exposure

- Insecticides
- Biological agents
- Genetically Modified Vectors
- Environmental management
- Personal protection



Success depends on the environmental context, political will and community support

Key reasons for failure

- Vectors develop resistance to insecticides
- Vector control strategies, such as aerial spraying of chemicals or introduction of genetically modified organisms, require public or political endorsement before implementation
- Negative public opinion can impede successful vector control campaigns
- Human behaviour is shaped and modified by a large set of influences
→ what is effective in one place may not be effective in another

Lack of confidence in the interventions

- During the 2012 West Nile Virus outbreak in Northern Texas, only 2 out of 4 counties engaged in aerial spraying due to public concerns and political will
- In 2016, when Zika appeared in Miami, aerial spraying was delayed for 24h due to large protests against the use of insecticide

Lack of knowledge about VBDs

- *Malaria is due to bite of mosquito, exposure of children to hot environmental condition and being hunger, but it is hunger that causes more malaria than bite of mosquito*
- *I am in trouble to accept that malaria is caused by all mosquitoes. If the mosquito bite causes malaria, it will lead to many more diseased individuals*
- Misuse of LLINS (fishing nets, protection of crops, football goal, etc.)

Conditions for effective vector control

- Interventions are effective only if accessible, acceptable, and properly used within communities
- Interventions should be sustainable
- Acceptance of interventions is based on knowledge acquisition, intention to change behaviour and engagement in behaviour change

Role of social sciences

- Improve the effectiveness of measures to mobilise communities by understanding local context, identifying needs and barriers, raising awareness

REVIEW

Open Access

Mobilising communities for *Aedes aegypti* control: the SEPA approach

Robert J. Ledogar^{1*}, Jorge Arostegui², Carlos Hernández-Alvarez², Arcadio Morales-Perez³, Elizabeth Nava-Aguilera³, José Legorreta-Soberanis³, Harold Suazo-Laguna², Alejandro Belli², Jorge Laucirica⁴, Josefina Coloma⁵, Eva Harris⁵ and Neil Andersson^{3,6}

From The Camino Verde Trial colloquium
Acapulco, Mexico. 17-21 June 2013

BMC Public Health 2017

Parents' perception on cause of malaria and their malaria prevention experience among school-aged children in Kutcha district, Southern Ethiopia; qualitative study

Zerihun Zerdo^{1,2*}, Jean-Pierre Van Geertruyden², Fekadu Massebo³, Gelila Biresaw¹, Misgun Shewangizawu⁴, Abayneh Tunje⁴, Yilma Chisha⁴, Tsegaye Yohanes¹, Hilde Bastiaens^{5†}, Sibyl Antheriens^{5†}

PLoS ONE 2020

Revue d'Épidémiologie et de Santé Publique 67 (2019) 375–382



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Article original

Épidémies récurrentes de la dengue au Burkina Faso : préférences communautaires pour une intervention de prévention de la maladie

Recurrence of dengue epidemics in Burkina Faso: Community preference for an intervention to prevent the disease

S. Ouédraogo^{a,b}, S. Degroote^c, S.A. Barro^d, P.-A. Somé^d, E. Bonnet^e, V. Ridde^{e,*}



RESEARCH

Open Access

Hybrid mosquitoes? Evidence from rural Tanzania on how local communities conceptualize and respond to modified mosquitoes as a tool for malaria control


Marceline F. Finda^{1,2*}, Fredros O. Okumu^{1,2,3,4}, Elihaika Minja¹, Rukiyah Njalambaha¹, Winfrida Mponzi¹, Brian B. Tarimo¹, Prosper Chaki¹, Javier Lezaun⁵, Ann H. Kelly⁶ and Nicola Christofides²

Malaria Journal 2021

Role of social sciences

- Reinforce capacities by continuous training, transfer of knowledge, empowerment

Towards a better integration of social sciences in arbovirus research and decision-making: an experience from scientific collaboration between Cuban and Quebec institutions


Mabel Carabali¹ , Dennis Pérez^{2,3}, Stephanie Degroote^{3,4}, Alicia Reyes², Jay S. Kaufman¹ and Valery Ridde^{3,4}

Global Health Promotion, 2020

CASE STUDY

Open Access

Operationalizing stakeholder engagement for gene drive research in malaria elimination in Africa—translating guidance into practice












Lea Pare Toe¹, Bakara Dicko², Richard Linga³, Nourou Barry¹, Mouhamed Drabo⁴, Naima Sykes⁴ and Delphine Thizy^{4*} 

Malaria Journal 2022

POLICY PLATFORM

PLoS Negl Trop Dis 2019

Sustainable innovation in vector control requires strong partnerships with communities

Frederic Bartumeus^{1,2,3} , Guilherme B. Costa⁴ , Roger Eritja² , Ann H. Kelly⁵ , Marceline Finda⁶ , Javier Lezaun⁷ , Fredros Okumu⁶ , M. Megan Quinlan⁸ , Delphine C. Thizy⁹ , Léa Paré Toé¹⁰ , Megan Vaughan¹¹ 

Stakeholders' Perceptions of Integrated Community Case Management by Community Health Workers: A Post-Intervention Qualitative Study

Denise L. Buchner^{1*}, Jennifer L. Brenner¹, Jerome Kabakyenga², Kyomuhangi Teddy³, Samuel Maling², Celestine Barigye⁴, Alberto Nettel-Aguirre², Nalini Singhal²

PLoS ONE, 2014

Role of social sciences

- Evaluate the interventions

STUDY PROTOCOL

Open Access

Sustainable, healthy cities: protocol of a mixed methods evaluation of a cluster randomized controlled trial for *Aedes* control in Brazil using a community mobilization approach



Kate Zinszer^{1,2,3*}, Andrea Caprara³, Antonio Lima^{4,5}, Stéphanie Degroote⁶, Monica Zahreddine¹, Kellyanne Abreu³, Mabel Carabali⁷, Katia Charland¹, Mayana Azevedo Dantas³, José Wellington³, Beatriz Parra⁸, Florence Fournet⁶, Emmanuel Bonnet⁶, Denis Pérez^{1,9}, Emilie Robert¹⁰, Christian Dagenais¹, Tarik Benmarhnia¹¹, Neil Andersson^{7,12} and Valéry Ridde⁶

Trials 2020

Evaluation of Effectiveness of a Community-Based Intervention for Control of Dengue Virus Vector, Ouagadougou, Burkina Faso

Samiratou Ouédraogo, Tarik Benmarhnia, Emmanuel Bonnet, Paul-André Somé, Ahmed S. Barro, Yamba Kafando, Diloma Dieudonné Soma, Roch K. Dabiré, Diane Saré, Florence Fournet, Valéry Ridde

EID 2018

Sombié et al. *Implementation Science* (2020) 15:32
<https://doi.org/10.1186/s13012-020-00989-x>

Implementation Science

RESEARCH

Open Access

Analysis of the implementation of a community-based intervention to control dengue fever in Burkina Faso



Issa Sombié^{1,2*}, Stéphanie Degroote³, Paul André Somé² and Valéry Ridde^{3,4}

Conclusion

- Social scientific methods can help to identify the factors that determine opposition to/acceptance of vector control interventions
- Social scientific methods can contribute to the evaluation of the process, acceptability, fidelity, and sustainability of the interventions
- There is a particular interest to mobilize social sciences to co-develop innovative solutions, i.e. tools but also frameworks of thinking adapted to local contexts for improving vector control
- Social sciences must be involved in the development of effective vector control strategies



Thank you for attention....