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Vector-borne diseases and public health: 1986-2010

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Vector-borne diseases (VBDs) remain a prominent threat to human health, and research in this field has increased dramatically in recent decades. This study examines the published literature on VBDs and public health over a 25-year time period (1986-2010) and identifies important trends, hypothesizes their underlying factors, and makes predictions for future trends. Not only does this provide a historical snapshot for future researchers, but by identifying where significant focuses and neglects have been thus far, it can potentially influence future research decisions such as the allocation of funding and resources.

A systematic literature review was conducted from May-June 2017 using Web of Science and Google Scholar. A random sampling method was used to review publications for inclusion. Each publication was classified into a sub-theme based on its main purpose and further into 1 of 6 overarching themes. The prevalence (proportion of times a theme appeared) over the entire study period and rates for individual years were calculated and plotted appropriately.

A total of 632 publications were reviewed, the majority being peer-reviewed journal articles. A sharp increase in total publications was observed over the study period. Vector Pathogen Characteristics + Epidemiology was the most prevalent theme overall (28%) followed by Biotechnology Advancements (21%). Environmental Factors/Human Impact exhibited a strong positive trend overall ($R = 0.53$) due to an increasing number of publications on climate change.

Many important trends were identified and discussed. Some of the most important include associations between an increase in the popularity of climate change and the dramatic increase in Lyme disease incidence in the U.S. (both in the 1980's) with subsequent increases in publications. Moreover, the much higher prevalence of themes on vector behavior and control/prevention methods compared to clinical management of diseases shows that population-level approaches to prevention remain the dominant focus in combating VBDs.

References

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Biography

Satish Bidaisee is a Professor of Public Health and Preventive Medicine and Assistant Dean for Graduate Studies at St. George's University. He is a graduate of the University of the West Indies, Faculty of Medical Sciences, St. Augustine, Trinidad, St. George's University, School of Medicine, School of Graduate Studies and the University of Sheffield, UK. As a research investigator, Prof. Bidaisee supports community based participatory research and service activities in the fields of Emerging Infectious Diseases, Zoonoses, Food Safety and Security and One Health One Medicine. His research projects include Human Behavior, Climate Change and Viral Infections, Zoonoses and One Health and Vector Borne Disease outbreak investigation. Prof. Bidaisee is board certified by the U.S. National Board of Public Health Examiners, and holds Fellowships to the Royal Society of Public Health (FRSPH), Royal Society of Tropical Medicine and Hygiene (FRSTMH), International Society on Infectious Diseases and the Society of Biology.

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