

Journal Pre-proof

Correspondence: The African snakebite Alliance

George O. Oluoch, Ymkje Stienstra, Janna M. Schurer, Rhona Mijumbi, Jean Bosco Mbonigaba, Brent Thomas, Sara Padidar, John Amuasi, David G. Lalloo



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3 **Abstract:**

4 The goal to reduce the burden of snakebite envenoming is challenged by the gaps in
5 evidence for clinical care and public health. These evidence gaps and the absence
6 of a strong network are illustrated by bibliometrics. The African Snakebite Alliance is
7 a multidisciplinary group focusing on research themes which will generate evidence
8 needed to shape policy and practice.

9 **Correspondence:**

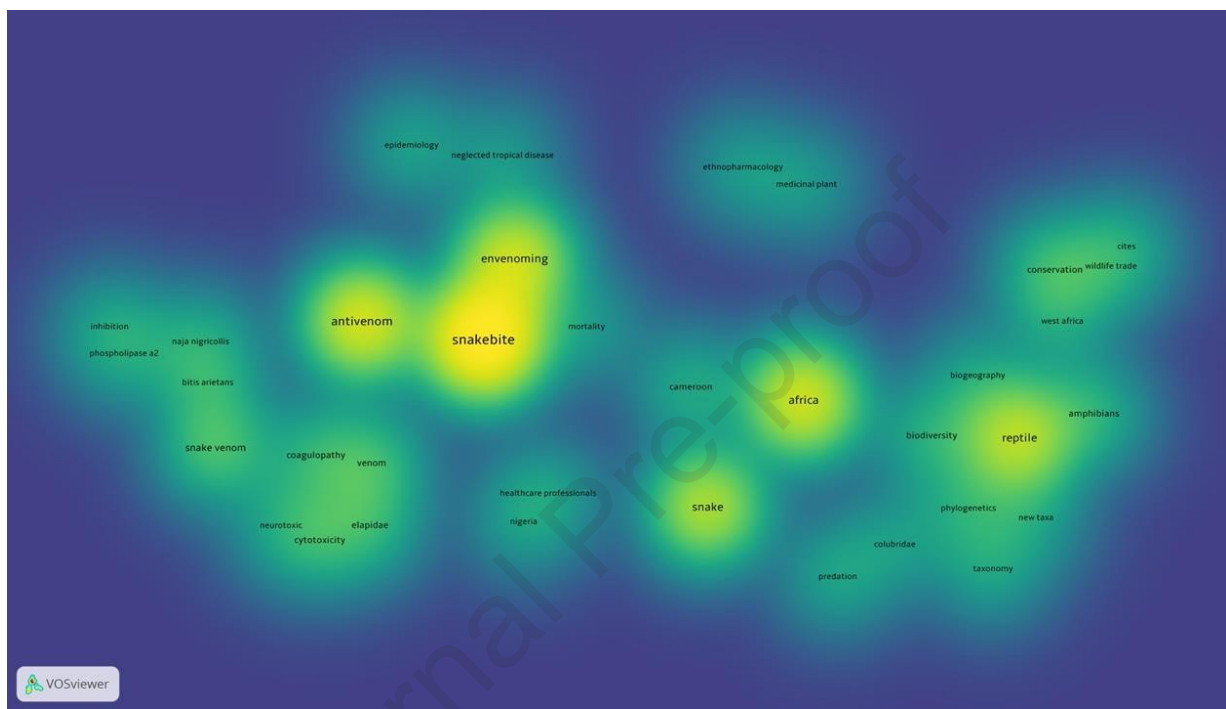
10 Up to one-third of global snakebite deaths are thought to occur in sub-Saharan Africa
11 (SSA) with an upper estimate of 32 000 annually.¹ The disability burden through scar
12 contractures, joint deformities, blindness and psychosocial trauma is also substantial
13 with an estimated 1.03 million disability-adjusted life years (DALYs) annually. The
14 majority of DALYs are attributable to years of life lost (77%), followed by snakebite-
15 induced post-traumatic stress disorder (15%) and an estimated 14 766 amputations
16 (8%).²

17 In 2017, snakebite was formally recognised as a Neglected Tropical Disease (NTD)
18 with major initiatives now underway, such as the development and implementation of
19 the 2019 WHO snakebite roadmap.

20 We undertook an evaluation of the research output on snakes and snakebite
21 between 2016 and 2020 from the 47 countries in the WHO Africa Region. Scientific
22 articles on snakes or snakebites with at least one author with a WHO Africa Region
23 affiliation were identified via Scopus (www.scopus.com) without a language
24 restriction. The initial search led to 346 results, of which 233 articles were about
25 snakes and snakebites after reading the abstract. VOSviewer was used for a density

26 visualization of the author key terms of these articles in figure 1. The larger the
 27 number of items in the neighborhood of a point and the higher the weights of the
 28 neighboring items, the closer the color of the point is to yellow. ³

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32 **Figure 1.** Density visualization of the key terms in publications from 2016-2020 on snakes and
 33 snakebites with at least one affiliation in the WHO Africa region.

34

35 The figure shows that epidemiology, clinical outcomes (morbidity or mortality) or health
 36 policy were relatively poorly represented and that a sizable proportion of the limited
 37 output was related to snake biology and conservation with limited application to
 38 addressing the clinical or public health issues of snakebite. First and senior authorship
 39 was linked to an affiliation in the WHO Africa region in respectively 70% and 58%.
 40 Twenty percent of the first authors and 18% of the senior authors were female, which
 41 is considerably lower than the continental average of 39% and 35% respectively.⁴ The

42 publications were poorly cited, with a median of 4 citations per article. The 104
43 publications with affiliations from the WHO Africa Region only, had a median of 2
44 citations per article. Only three publications were cited more than 100 times. Two of
45 these articles were on the global response to snakebite envenoming as an NTD. One
46 publication was on targeted conservation. Six articles were published in French.
47 South-South collaborations were rare.

48 Bibliometrics clearly illustrate the legacy of neglect with regard to research outputs on
49 snakebite, the gaps in evidence for clinical care and public health policy, and the
50 absence of a strong network dedicated to reduce the burden of SBE.

51 With the support of Wellcome, a multidisciplinary group of researchers initiated the
52 African Snakebite Alliance to create a robust portfolio of impactful snakebite research,
53 to build meaningful partnerships between researchers, policymakers and civil society,
54 and to strengthen capacity and leadership for sustainable and multidisciplinary
55 research. The Alliance will initially focus on research themes which will generate
56 evidence most urgently needed to shape policy and practice to reduce snakebite
57 burden in Africa. Research will be prioritised based on the most pressing needs from
58 within the region and will only be supported if critical to inform decision making in the
59 different stages of the policy and practice cycles. We plan to raise the profile of
60 snakebite and snakebite-related research on the socio-political and policy agenda
61 through efforts to increase stakeholder awareness and participation, and engagement
62 with policy processes. Research projects will be supported through a mix of directly
63 commissioned and open calls supporting South-South collaboration. The specific
64 research questions and projects will be further refined in partnership with the policy
65 and community actors to elicit priorities and co-develop the solutions. The Alliance

66 aims to invite a wide range of experts, community members and other stakeholders,
67 including Toxicon readers, active in snakebite envenoming.

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69 www.AfricanSnakebiteAlliance.com

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72 George O Oluoch^{1,2*}, Ymkje Stienstra^{2,3*#}, Janna M Schurer⁴, Rhona Mijumbi^{5,6},

73 Jean Bosco Mbonigaba⁷, Brent Thomas², Sara Padidar^{8,9,10}, John Amuasi^{11,12}, David

74 G Lalloo²

75 *shared first

76 #corresponding author: ymkje.stienstra@lstmed.ac.uk

77 1 Kenya Snakebite Research & Intervention Centre, Kenya Institute of Primate

78 Research, Ministry of Health, Karen, Nairobi, Kenya

79 2 Centre for Snakebite Research and Interventions, Liverpool School of Tropical

80 Medicine, Liverpool, United Kingdom

81 3 University of Groningen, Department of Internal Medicine/Infectious Diseases,

82 University Medical Centre Groningen, Groningen, The Netherlands

83 4 Center for One Health, University of Global Health Equity, Butaro, Rwanda.

84 5 Malawi Liverpool Wellcome Research Programme, Queen Elizabeth Central

85 Hospital, Blantyre Malawi

86

87 6 The Center for Rapid Evidence Synthesis, Makerere University, Kampala, Uganda.

88 7 Rwanda Neglected Tropical Diseases Programme, Rwanda Biomedical Centre,
89 Ministry of Health Kigali, Rwanda

90 8 Eswatini Snakebite Research and Intervention Centre, Simunye, Eswatini

91 9 Eswatini Antivenom Foundation, Simunye, Eswatini

92 10 Department of Biological Sciences, University of Eswatini, Kwaluseni, Eswatini

93 11 Department of Global Health, School of Public Health & Kumasi Centre for
94 Collaborative Research in Tropical Medicine, Kwame Nkrumah University of Science
95 and Technology, Kumasi, Ghana

96 12 Bernhard Nocht Institute of Tropical Medicine, Hamburg, Germany

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George O Oluoch^{1,2*}, Ymkje Stienstra^{2,3*#}, Janna M Schurer⁴, Rhona Mijumbi^{5,6},
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1 Kenya Snakebite Research & Intervention Centre, Kenya Institute of Primate
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2 Centre for Snakebite Research and Interventions, Liverpool School of Tropical
Medicine, Liverpool, United Kingdom

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University Medical Centre Groningen, Groningen, The Netherlands

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9 Eswatini Antivenom Foundation, Simunye, Eswatini

10 Department of Biological Sciences, University of Eswatini, Kwaluseni, Eswatini

11 Department of Global Health, School of Public Health & Kumasi Centre for Collaborative Research in Tropical Medicine, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

12 Bernhard Nocht Institute of Tropical Medicine, Hamburg, Germany

Declaration of interests

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