

Evaluating Temporal Patterns of Snakebite in Sri Lanka: The Potential for Higher Snakebite Burdens with Climate Change

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Background: Snakebite is a neglected tropical disease that has been overlooked by healthcare decision makers in many countries. Previous studies have reported seasonal variation in hospital admission rates due to snakebites in endemic countries including Sri Lanka, but seasonal patterns have not been investigated in detail.

Methods: A national community-based survey was conducted during the period of August 2012 to June 2013. The survey used a multistage cluster design, sampled 165 665 individuals living in 44 136 households and recorded all recalled snakebite events that had occurred during the preceding year. Log-linear models were fitted to describe the expected number of snakebites occurring in each month, taking into account seasonal trends and weather conditions, and addressing the effects of variation in survey effort during the study and of recall bias amongst survey respondents.

Results: Snakebite events showed a clear seasonal variation. Typically, snakebite incidence is highest during November–December followed by March–May and August, but this can vary between years due to variations in relative humidity, which is also a risk factor. Low relative-humidity levels are associated with high snakebite incidence. If current climate-change projections are correct, this could lead to an increase in the annual snakebite burden of 31.3% (95% confidence interval: 10.7–55.7) during the next 25–50 years.

Conclusions: Snakebite in Sri Lanka shows seasonal variation. Additionally, more snakebites can be expected during periods of lower-than-expected humidity. Global climate change is likely to increase the incidence of snakebite in Sri Lanka

Keywords: Snakebite, Seasonal Variation, Weather, Relative Humidity, Global Climate Change

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