Individual risk factors of snakebites in Sri Lankan community

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Introduction

Sri Lanka has 92 identified snake species, and one of the highest snakebite incidence (SBI) rates in the world. According to hospital statistics about 37,000 patients are admitted to government hospitals annually as a result of snakebite. The aim of the present study is to identify individual risk factors for snakebite in Sri Lanka.

Methodology

A community-based island-wide study ("National Snakebite Study") was conducted in all nine provinces of Sri Lanka, with 5,000 households sampled in each province. All the residents of the selected households were included. One-year recall data for all permanent residents of that particular household was obtained regarding the experience of snakebite. Generalized linear models were used to model SBI. Individual-level gender, age, ethnicity, religion, income, education and employment were included as explanatory variables. Statistical analysis used the R programming language. Statistical significance was assessed at the 0.01 level.

Results and conclusions

Out of 125,391 participants, 63,604 (50.7%) were males. There was no SBI difference amongst 10-year interval age groups from 30 to 59, hence these three age groups were collapsed. High SBI was observed in the age 30-59 year group compared to age less than 20 ($P<0.001$), 20 to 29 ($P<0.001$), 60 to 69 ($P<0.003$) and over 70 ($P<0.007$), with lower SBI in the two extreme age groups. Males had higher SBI compared to females ($P<0.001$). Field workers had higher SBI compared to non-field workers ($P<0.001$). Ethnicity and income showed a significant interaction. Low income non-Sinhalese had high SBI compared to middle income (Rs. 5000-19,999, $P<0.001$) and high income (Rs.>20,000, $P=0.001$) non-Sinhalese, whereas Sinhalese had high SBI irrespective of their income status. In summary, the high risk categories for snakebites are males, field workers, 30 − 60 year individuals, Sinhalese and low income non-Sinhalese.

Key words: community based survey, Snakebite, risk factors