# Risk Factors Associated with Two Viperid Snake Bites among Patients Presented to General Hospital, Kurunegala: A Case Control Study

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Two viperid snakes, namely Russell's viper (*Daboia russelii*) and hump-nosed viper (*Hypnale* spp.) are responsible for most of the venomous snake bites in Sri Lanka. These two snakes share similar habitats and behaviour. Prevention of viperid snake bite would certainly reduce the burden on hospitals and as such, identification of related risk factors is of paramount importance. The aim of this study was to assess the environmental and the behavioural risk factors of victims that promoted the attacks by these two snakes.

This case control study was based on Kurunegala district. Sample size was calculated considering the anticipated odds ratio as two, with the level of significance as 95% and the power of the test as 80%. The cases were recruited from consecutive admissions to the General Hospital, Kurunegala with proven viperid bites. Age and gender matched controls, with no history of snake bites, were selected from relatives and neighbours of patients at a ratio of 1 case: 2 controls. Patients and controls were interviewed and the relevant data were collected in an interviewer administered questionnaire.

There were 56 cases and 112 controls with mean age 44 years (SD 15) and 45 years (SD 22) respectively. Of the 14 risk factors assessed, 8 risk factors showed a significant association with viperid bites. Among these, the risk factors at the time of bite were:

(1) being in an ill lit place ($p < 0.001$, OR, 95% CI= 6.6 (3.25-13.4),
(2) being in outdoor places ($p < 0.001$, OR, 95% CI= 148.8 (43.7-506),
(3) working in a field ($p < 0.001$, OR, 95% CI= 175 (31.4 – 976).

The general risk factors that showed significant associations were:

(1) Occupation as a field worker ($p < 0.001$, OR, 95% CI= 5.3(2.3-12 ),
(2) low level of financial status ($p < 0.001$, OR, 95% CI=($p < 0.001$,OR, 95% CI=9.9(2.75- 35.5),
(3) lack of attached toilet ($p < 0.001$, OR, 95% CI= 7.38 (2.15- 25.3),
(4) presence of rats in the compounds ($p < 0.001$, OR, 95% CI= 11 (4.88-24.9).

Identifying easily remediable risk factors such as use of protective foot wear, avoiding ill lit places, having attached toilets and getting rid of house rats would help in preventing viperid snake bites