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Study of snakebite in Nawalpur snakebite treatment center, Netragunj, Sarlahi district, south-central Nepal

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Objective: To explore the snakebite burden, describe demographic condition, circumstances, seasonal patterns, care and outcomes of snakebite in south-central Nepal.

Methods: We studied snakebites during 01 February through 31 July 2017 retrospectively using records maintained between July 2013 and January 2014. We analyzed data by means of descriptive statistics, student t-test, and Chi-square test (5% significance level) using R statistical programming.

Results: A total of 396 snakebite cases with an average age of 32 years (median 29, standard deviation (SD) 17, standard error of mean 0.86) were admitted in Nawalpur Snakebite Treatment Center, Netragunj during seven month period. Out of all cases, 10 were envenomed (3%) resulting in three deaths (case fatality rate 30%), 202 cases were females (51%) and 194 males (49%) (male and female ratio 0.96, p=0.688), 214 (54%) were farmers, 100 (25%) students (p <0.001). The highest number of snakebites occurred in the evening (n=113, 28%) and night (n=95, 24%) (df 4, p<0.001) in August (37%, n=146) and September (25%, n=98) (p <0.001). The majority of snakebite patients received snakebite on lower extremities (n=238, 60%) while engaged in agricultural activities (n=145, 37%) and sleeping (n=72, 18%) mainly (df 15, p <0.001). They reached this center within 0.2 to 10.6 hours (median 1.3, SD 1.5) from the snakebite localities ranged in 1 to 60 km (median 13, SD 11.9) using motorcycle (n=319, 81%) and applying first aid (n=110, 28%). Only 43% (n=169) of patients noticed snakes involved in bite. They remained in hospital for 0.52 days (SD 0.18, range 0.13 to 2.29, p=0.0002).

Conclusion: Farmers were at the greatest risk of snakebites in this region suggesting snakebite to be an important, occupational public health issue in Sarlahi District. This study suggests the highest snakebite incidence during dark hours. Therefore, there is an urgent need to improve the knowledge of people on prevention of snakebites. For example, using torch and gum boot while involved in agricultural and house activities in dark hours, mosquito-net while sleeping). Further study on circumstances of snakebites and pre-hospital care practices used by snakebite victims is essential for the effective measures on prevention and pre-hospital care of snakebites.