

## Knowledge, Attitude and Practice regarding Snakes and Snakebite among Interns

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### Abstract

**Background:** Snakebite is a global health problem associated with high morbidity and mortality. India has the highest number of deaths due to snakebites in the World with 35000-50000 dying per year according to World Health Organization (WHO). Despite having this highest burden, snakebite is still a neglected topic in the global health agenda.

**Objective:** To assess the knowledge, attitude and practice regarding snake and snakebite among the interns of J.N. Medical College, Belagavi, Karnataka.

**Need for the study:** Knowledge regarding snakes and snakebite among interns is very important as they are exposed to such cases in casualty and rural practice.

**Materials and Methods:** This cross-sectional study was conducted among 150 interns of J.N. Medical College, Belagavi, Karnataka. A predesigned and pretested questionnaire was used to assess their knowledge, attitude and practice after taking written informed consent. Universal sampling method was used and each intern was a study participant.

**Results:** Most of the study participants when shown different photographs could differentiate between venomous and non-venomous snakes and their bite marks. Most common venomous snake to be identified was Spectacled Cobra while Common Krait was the least identified. About 90% of study subjects correctly differentiated between the pictures of venomous and non-venomous snakebite marks.

**Conclusion:** In the present study, majority of the participants had basic knowledge about snake identification and snakebite. All the participant knew that there is medical treatment available for snakebite and most of them were in favour of not killing the snakes. Snakebite management should be an important part of medical curriculum.

**Keywords:** Snakes, Snakebite, Interns, Rural.

### Introduction

Snakebite is a serious and important problem especially in rural areas of tropical and subtropical developing countries, having been considered by World Health Organization (WHO) as a neglected extrinsic injury. Bites are more frequent in young men and generally occur on lower limbs. The incidence of snakebite is higher during the rainy season and during the periods of intense agricultural activity.<sup>(1)</sup> Snakebite is an important occupational injury affecting farmers, plantation workers, herders and fishermen. Open style habitation and the practice of sleeping on floor also expose people to bites from nocturnal snakes. It is very common among agriculture workers because they do not take necessary precautionary measures to avoid snakebite such as wearing gloves, boots, etc either because of unaffordability or because of discomfort associated with their use in hot and humid conditions. Snake envenomation is a serious medical crisis, wherein the spectrum of injury can vary from local tissue damage to involvement of almost all vital organs of the body, and medical interns are the first one to encounter these cases in casualty. Most of the snakebites are harmless and are caused by non-poisonous species so it is the duty of medical intern to identify the snakebite mark and proceed accordingly.

### Materials and Method

This cross-sectional study was conducted among interns of J.N. Medical College, Belagavi, Karnataka during the period of January to July 2017. A predesigned and pretested questionnaire was used to interview the study participants and various in depth questions regarding knowledge, attitude and practice about snakes and snakebite were asked. Four pictures each of venomous and non-venomous snakes along with two pictures of snakebite marks were shown to study participant for identification based questions. Statistical analysis was done by using Microsoft Excel and the results were calculated in percentages.

### Results

Out of the total 150 study participants, 87 (58%) were males and 63 (42%) were females. All were interns and hence completed their final year MBBS. To assess the knowledge regarding species identification and venomosity of snakes, four images of locally prevalent venomous and non-venomous snakes were shown to the study participant along with two images of bite marks of venomous and non-venomous snakes.

**Table 1: Distribution of study participants according to knowledge regarding venomous snakes**

Snake Species	Image identified correctly n(%)	Image identified incorrectly n(%)	Venomosity identified correctly n(%)	Venomosity identified incorrectly n(%)	Both image & venomosity identified correctly n(%)	Both image & venomosity identified incorrectly n(%)
Russel's Viper	66 (44%)	84 (56%)	111 (74%)	39 (26%)	54 (36%)	27 (18%)
Saw Scaled Viper	59 (39.3%)	91 (60.7%)	107 (71.3%)	43 (28.7%)	48 (32%)	32 (21.3%)
Spectacled Cobra	142 (94.7%)	08 (5.3%)	143 (95.3%)	07 (4.7%)	137 (91.3%)	02 (1.3%)
Common Krait	54 (36%)	96 (64%)	104 (69.3%)	46 (30.7%)	41 (27.3%)	33 (22%)

142 (94.7%) of the study participants could identify Spectacled Cobra correctly and 143 (95.3%) correctly identified it to be venomous. Correct image identification was the least for Common Krait 54 (36%) while incorrect venomosity identification was the most for Common Krait only 46 (30.7%).

**Table 2: Distribution of study participants according to knowledge regarding non-venomous snakes**

Snake species	Image identified correctly n (%)	Image identified incorrectly n (%)	Venomosity identified correctly n (%)	Venomosity identified incorrectly n (%)	Both image & venomosity identified correctly n (%)	Both image & venomosity identified incorrectly n (%)
Green Keelback	23 (15.3%)	127 (84.7%)	70 (46.7%)	80 (53.3%)	12 (8%)	69 (46%)
Vine Snake	20 (13.3%)	130 (86.7%)	65 (43.3%)	85 (56.7%)	11 (7.3%)	76 (50.7%)
Rat Snake	28 (18.7%)	122 (81.3%)	70 (46.7%)	80 (53.3%)	15 (10%)	67 (44.7%)
Indian Rock Python	62 (41.3%)	88 (58.7%)	71 (47.3%)	79 (52.7%)	21 (14%)	38 (25.3%)

Correct image identification in case of non-venomous snake was maximum for Indian Rock Python i.e. 62 (41.3%) of study participants while least was for Vine Snake i.e., 20 (13.3%) of the study participants. Correct venomosity identification was most for Indian Rock Python i.e. 71 (47.3%) while least was for Vine snake.

100% of the study participants knew that all snakes are not poisonous and medical treatment is available for snakebite while 129 (86%) participant knew about availability of treatment for snakebite at PHC. 100% of

the study participant were aware about the difference in bite marks of venomous and non-venomous snakes.

138 (92%) participants believed that snakes bite mostly during monsoons and at night while 100% opined that they bite for self-defence. 141 (94%) of the study participants believed that snakes are helpful to farmers.

100% of the study participants believed that snakes do not possess any magical powers while 06 (04%) of them considered them as God. 147 (98%) of study participants opined that snakes should not be killed while 100% believed they should be rescued and rehabilitated.

When asked about the immediate measures taken by the study participants if a snake bites them, all the study participants said they would tie a tourniquet at the site and would rush to the nearest health facility while 21 (14%) believed in washing the wound with soap.

When asked about measures taken upon seeing a snake, maximum number of respondents 105 (70%) opined leaving the snake as it is, followed by calling a forest official or a professional snake rescuer by 27 (18%).

Nearly 36 (24%) of the total participant said they offer milk to snakes brought by local snake charmers on Nag-panchami festival.

## Discussion

In the present study 142 (94.7%) of the total study participants could identify the Spectacled Cobra correctly and 143 (95.3%) correctly identified it to be venomous which was significantly more as compared to other snakes. This could be due to the fact that Spectacled Cobra have a prominent hood which makes them easily identifiable and media portrayal of Cobras also have a role to play. Similar results have been found in the studies done by Duminda et al<sup>(2)</sup> in Sri Lanka. According to study done by Pandey et al<sup>(3)</sup> in Nepal, 95% study participants were aware that Common Cobra is venomous.

138 (92%) of study participant knew that snakes bite mostly during monsoon which is similar to study done by Wang et al.<sup>(4)</sup> In a similar study done by Kshirsagar et al<sup>(5)</sup> on snakebite cases in children of rural India, it was found that more than half of the patients came between the month of July and September. In another study done by Francis et al<sup>(6)</sup> in southern India most of the Cobra bite cases came in the month of June. In the present study all participants believed that they would tie a tourniquet at the site of snakebite which is a potentially dangerous intervention carrying a high risk of adverse consequences such as ischaemic damage and rhabdomyolysis contributing to skin grafting and even amputation.<sup>(7)</sup>

In this study, most of the study participant were in the favour of immobilization of affected limb and application of ice which is similar to study done by Kumar et al.<sup>(8)</sup>

## Conclusion

The present study points to certain lacunae in the knowledge on the snakebite. These gaps are to be

addressed at personal, community and government level. Snakebite management should be an important part of medical curriculum. Knowledge regarding snakes and snakebite among interns is very important as they are exposed to such cases in casualty and rural practice because in internship they have 15 days posting in casualty and 30 days posting in RHTC. Poor access to often inadequately equipped and staffed medical centers in rural areas, high cost of treatment and inadequate use of antivenom are major concerns. In order to address these issues we suggest that an intensive educational effort should be focused on basic knowledge of snakes, prevention and first aid measures.

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