

## Prevention is better than cure : snakebite education in India

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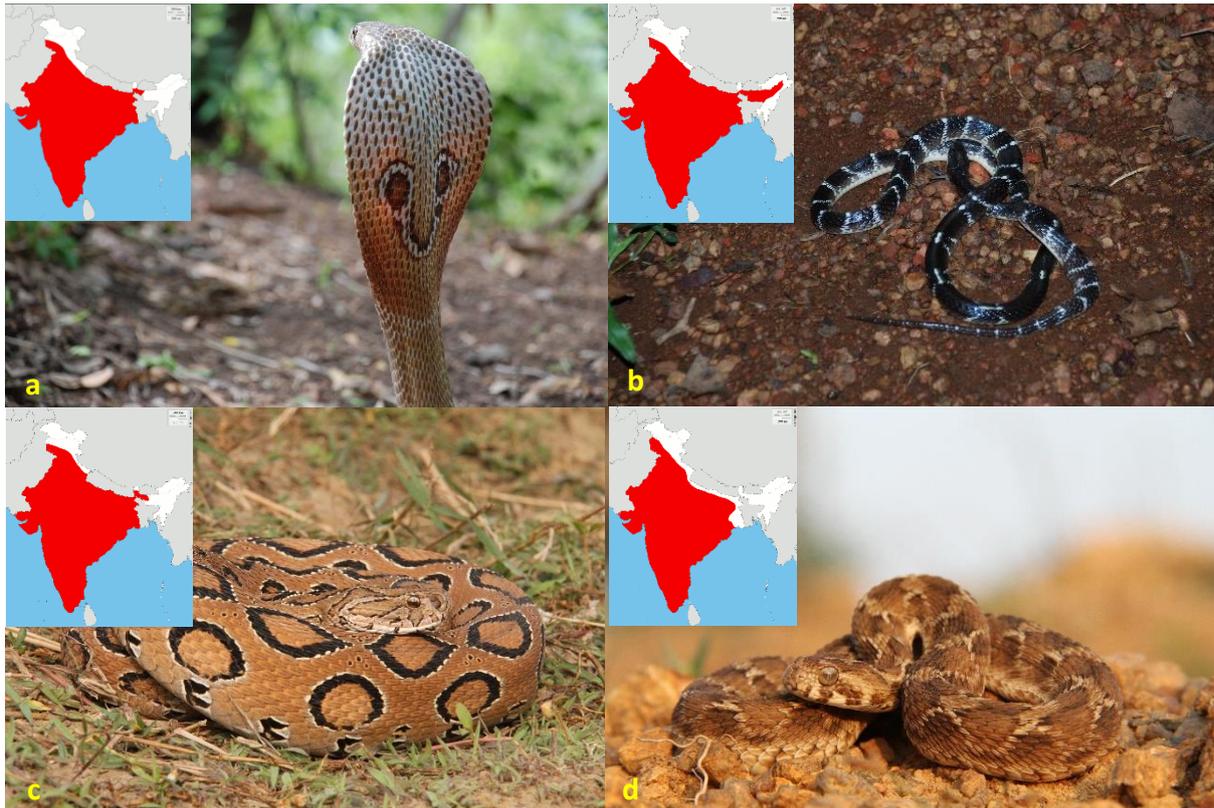
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**Figure 1:** The ‘Big Four’ venomous snake species in India, which are thought to cause the most fatalities from snakebite in India and against whose venom a polyvalent antivenom is manufactured. a) spectacled cobra *Naja naja*, b) common Indian krait *Bungarus caeruleus*, c) Russell’s viper *Daboia russelii*; and d) saw-scaled viper *Echis carinatus*. Inset maps were produced using information from the literature and personal observations and show the range of the species within the boundaries of India only. Note that the northeastern region largely lacks the Big Four, which are replaced by several other species of cobras, kraits and pitvipers. Photo credits: a) and b) Stuart Graham; c) Anita Malhotra and d) Wolfgang Wüster.

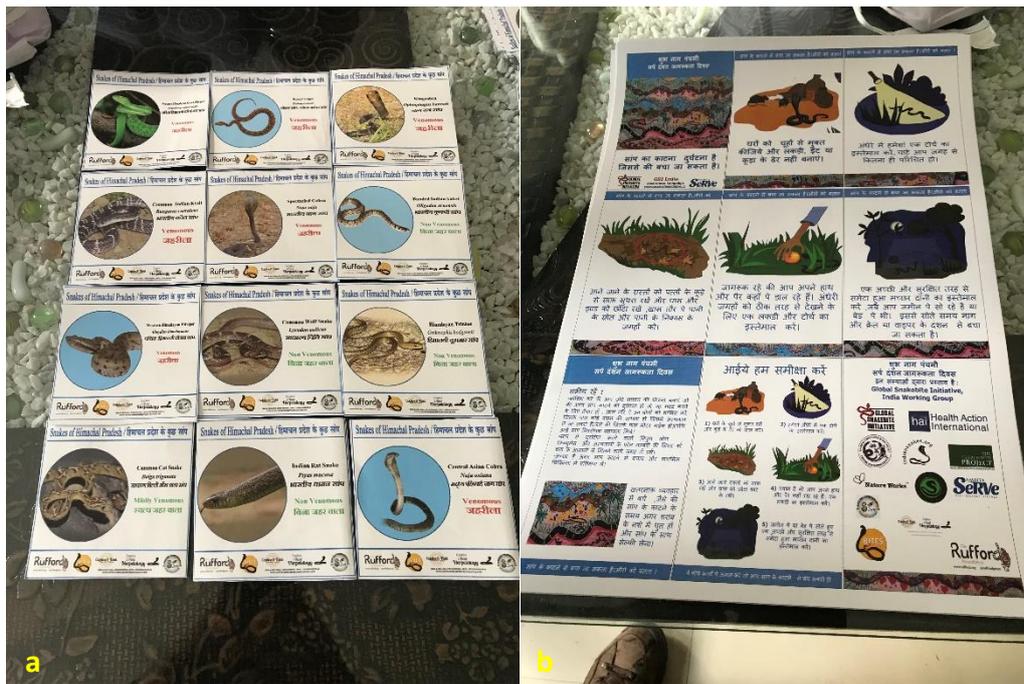
Location of Figure 1 in the paper: 0 Introduction, after 3<sup>rd</sup> paragraph

**Table 1.** Summary of then WHO (2016) recommendations for snake bite prevention.

Location of table 1 in the paper: 1. Methodology, after the 4<sup>th</sup> paragraph

Snake bite risk activities	Recommendation
<b>Inside house</b>	<ul style="list-style-type: none"> <li>• Do not keep livestock close to the house;</li> <li>• Store food in rodent-proof containers;</li> <li>• Do not sleep on the floor; and</li> <li>• Use an insecticide-impregnated mosquito net that is well tucked-in under the mattress or sleeping mat (Chappuis <i>et al.</i>, 2007).</li> </ul>
<b>Farm-yard, compound / garden</b>	<ul style="list-style-type: none"> <li>• Do not provide hiding places for snakes;</li> <li>• Cut tree branches that touch the house;</li> <li>• Keep grass short;</li> <li>• Use a light when walking outside; and</li> <li>• Try to create buffer zones between the house and farmland.</li> </ul>
<b>In the countryside</b>	<ul style="list-style-type: none"> <li>• Wear appropriate light weight boots (Tun Pe <i>et al.</i>, 2002);</li> <li>• Do not put hands into holes or nests or any hidden places where snakes might be resting;</li> <li>• Do not step on to the rocks;</li> <li>• Place lamps at strategic locations (outside house, between houses, in front of the latrine); and</li> <li>• Use a stick to scare away snakes prior to working in an area using bare hands.</li> </ul>

<b>On the road</b>	<ul style="list-style-type: none"><li>• Be careful when walking on roads after heavy rain especially after dark; and</li><li>• Never intentionally run over snakes.</li></ul>
<b>General recommendations</b>	<ul style="list-style-type: none"><li>• Avoid contact with snakes;</li><li>• Never handle, threaten or attack a snake and never intentionally trap or corner a snake in an enclosed space; and</li><li>• Contact dedicated snake catchers if you see a snake.</li></ul>



**Figure 2:** Information (a: stickers and b: posters) produced to communicate recommendations made by WHO guidelines. The poster is the result of a joint collaboration work with the India Snakebite Initiative.

Location of Figure 2 in the paper: 3.2.2 Social media and Education material, after 1<sup>st</sup> paragraph



**Figure 3:** Demonstrational images used during training depicting *Bungarus caeruleus* in a typical rural home setting. The bed being located on the floor leaves people vulnerable in such circumstances. It is not known why this species chooses to climb n the bed so frequently. Unfortunately, the symptoms of a krait bite may not be immediately obvious or painful enough to wake the victim and could result in death or paralysis before morning. Often, the symptoms can be delayed and early symptoms such as abdominal cramp can be easily confused with other health conditions. These factors result in a delay reaching hospitals and obtaining the required antivenom.

Location of figure 3 in the paper: 3.2.2 Social media and Education material, after the 3<sup>rd</sup> paragraph



**Figure 4:** Demonstrational images used during training depicting *Naja naja* in a typical rural home setting. A kitchen with a slightly open window, open stores and cluttered counters attracts rodents which enter to feed or nest under boxes and various materials. This commonly results in foraging snakes following the scent trails of rodents into such homes. Unaware of the snake's presence (note the snake hidden within a paper bag in the bottom left image), people rummage around looking for food supplies or utensils accidentally disturb the snake, and cause the snake to bite in self-defence.

Location of figure 4 in the paper: 3.2.2 Social media and Education material, after the 5<sup>th</sup> paragraph



**Figure 5:** Training of Forest Department Personnel included basic information about snake biology and demonstration of care of a snakebite victim.

**Location in the paper of Figure 5:** 3.2.3 Community involvement and Forest Department training after the 2<sup>nd</sup> paragraph