

## Attitude of Health Care Providers on Snake Bite in Rural Community of Bangladesh

Hafez Mohammad Nazmul Ahsan<sup>1</sup>, Md. Ridwanur Rahman<sup>2</sup>, Robed Amin<sup>3</sup>,  
Syed Mahbub Morshed<sup>4</sup>, Md. Amzad Hossain<sup>5</sup>, Mostafa Kamal<sup>6</sup>

<sup>1</sup>Associate Professor, Department of Medicine, Shaheed Suhrawardy Medical College, Dhaka, Bangladesh; <sup>2</sup>Professor & Head, Department of Medicine, Shaheed Suhrawardy Medical College, Dhaka, Bangladesh; <sup>3</sup>Associate Professor, Department of Medicine, Dhaka Medical College, Dhaka, Bangladesh; <sup>4</sup>Assistant Professor, Department of Nephrology, Shaheed Suhrawardy Medical College, Dhaka, Bangladesh; <sup>5</sup>Assistant Professor, Department of Medicine, Shaheed Suhrawardy Medical College Dhaka, Bangladesh; <sup>6</sup>Junior Consultant, Department of Medicine, Shaheed Suhrawardy Medical College, Dhaka, Bangladesh.

[Received: 25 June 2017; Revised on: 16 November 2017; Accepted on: 1 December 2017; Published: 1 January 2018]

### Abstract

**Background:** Health care providers have different attitude and practice about the snake bite in rural community of Bangladesh. **Objective:** The purpose of the present study was to know the attitude and practice about the snake bite in rural community of Bangladesh. **Methodology:** The findings from survey study on snake bite have been elicited from face to face interview with 243 number of medical professionals/health service providers consisting of 113 number of MBBS doctors, 86 number of nurses and 46 number of other health practitioners. The study area consisted of 5 zillasadar hospitals and 15 upazilla health complexes. This study aims to assess the Attitude and Practice of snakebite in rural community and effective management of snake bite through community engagement and using health care system of Bangladesh approach for prevention of snakebite in rural community and effective management of snake bite for the rural Bangladeshi people. It uses the methodological triangulation qualitative and quantitative approach as well as a case study design in analyzing data, whereby the exploratory-descriptive design is followed. **Result:** We purposively select the 243 sample (Doctors, Nurses, Paramedics ,Others) from the selected districts and its consisting random upazillas from the govt. sector hospitals keeping in mind gender balance (Male-Female) as a primary total target population. So in total, 5 division and its consisting random upazilas hospital including union health complex hospital personnel (From District, Upazilla& Community Hospitals)will be interviewed throughout mention areas of Bangladesh. The findings show that 60.1% of doctors, 50.0% of nurses and 56.8% of practitioners have a notion that the snake bite victims would go to Ozha followed by 11.5% of doctors, 4.7% of nurses and 11.4% of practitioners have a notion that they would go to the local healers and that of 26.5% of doctors, 41.9% of nurses and 32.9% of practitioners mentioned that the snake bite victims would go to doctors. The findings show that 69.0% of doctors, 64.0% of nurses and 56.8% of practitioners will recommend not to apply ‘tight bandage’ to victim’s snake bite spot and 67.3% of doctors, 65.1% of nurses and 13.6% of practitioners will recommend not to apply ‘Suction by mouth or chick’ to victim’s snake bite spot. The findings show that 82.3% of doctors, 90.7% of nurses and 70.5% of practitioners applied first aid to the snake bite victim as their common practice. **Conclusion:** Majority of health professionals are well informed regarding harmful traditions and measures. [*Journal of National Institute of Neurosciences Bangladesh, 2018;4(1): 28-32*]

**Keywords:** Attitude and practice; health care providers; snake bite; rural community; bangladesh

**Correspondence:** Dr. Hafez Mohammad Nazmul Ahsan, Associate Professor, Department of Medicine, Shaheed Suhrawardy Medical College, Dhaka, Bangladesh; Email: [babubluesky@yahoo.com](mailto:babubluesky@yahoo.com); Cell no.: +8801712557660

**Conflict of interest:** There is no conflict of interest relevant to this paper to disclose.

**Funding agency:** This research project was not funded by any group or any institution.

**Contribution to authors:** Ahsan HMN, Rahman MR, Amin R contributed from the protocol preparation up to report writing and also involved in the manuscript writing and Morshed SM, Hossain MA, Kamal M revised the paper.

**How to cite this article:** Ahsan HMN, Rahman MR, Amin R, Morshed SM, Hossain MA, Kamal M. Attitude of Health Care Providers on Snake Bite in Rural Community of Bangladesh. J Natl Inst Neurosci Bangladesh, 2018;4(1): 28-32

**Copyright:** ©2018. Ahsan et al. Published by Journal of National Institute of Neurosciences Bangladesh. This article is published under the Creative Commons CC BY-NC License (<https://creativecommons.org/licenses/by-nc/4.0/>). This license permits use, distribution and reproduction in any medium, provided the original work is properly cited, and is not used for commercial purposes.

## Introduction

Snake bite is a result of an unfortunate accidental interaction between a snake and a human victim<sup>1</sup>. It is the single most important toxin-related injury, causing substantial mortality in many parts of the Africa, Asia, and the Americas<sup>2</sup>. Snake bite is a burning public health issue in Bangladesh as a disaster prone country and its geographical position and climatic conditions<sup>3</sup>. Snake bite, particularly in the rural Bangladesh is a major cause of mortality and morbidity, and it has a significant impact on human health and economy through treatment related expenditure and loss of productivity<sup>3</sup>.

Most often the victim of snake bite is a poor, young and active individual<sup>4</sup>. Biting occurs mostly when individuals are at work, engaging in activities such as cultivation, fishing, plantation, wood collection, or tending crops or gardens<sup>5</sup>. The purpose of the present study was to know the attitude and practice about the snake bite in rural community of Bangladesh.

## Methodology

This was a cross-sectional study conducted in the Department of Medicine at Shaheed Suhrawardy medical College, Dhaka, Bangladesh from January 2014 to June 2014 for a period of six (6) months. It uses the methodological triangulation qualitative and quantitative approach as well as a case study design in analyzing data, whereby the exploratory-descriptive design is followed. This study carry out to see the common type of snakes in local area with clinical presentations, complications and outcome of snake bite patients in service. Information on frequency of snake bite and medical professional' length of stay in selected hospital/community clinic over the preceding twelve months was rigorously collected from the respondents through an interviewer administered questionnaire. Point estimates and confidence intervals of the incidence density of snake bite, weighted and adjusted for the multi-stage cluster sampling design, were obtained. Geographical coverage of each survey should include the entire national territory unless there is a strong reasons for excluding certain areas. If areas as must be excluded they should constitute a coherent domain. A survey from which a number of scatted zones have been excluded is difficult to interpret and to use. Bangladesh is divided into eight administrative divisions. We undertook a purposively random sample of hospitals within each administrative division. Firstly, all eight administrative divisions were selected. Afterwards, one districts and upazila from each selected division are randomly selected and also focus to be given in the Community

clinic is the lowest administrative unit in both Urban and rural areas in Bangladesh. After obtaining the respondent's written consent, information was collected on snake bites and their consequences, and treatment seeking behavior following snake bites from the respondents. In order to conduct the study, primary data to be collected using structured questionnaire from the district, upazila hospital and clinic in different districts of Bangladesh. The study questionnaire was developed through review of the draft questionnaire by the project consultants, experts and discussion with the client field-testing and moderation to cover all the required indicators. The study questionnaire was pre-tested in the study location and then finalized. Direct personal interview approach was adopted for collection of primary data. The consultants conducted focus group discussion (FGDs) with the participation of the respondents who are involved with project interventions in the project areas. Each FGD was organized with 10 participants. Details questionnaires were developed with consultation of sector expert during field study. On completion of the fieldwork, the data was coded and entered into a computerized data management system (SPSS version 20.0).

## Results

The findings from survey study on snake bite have been elicited from face to face interview with 243 number of medical professionals/health service providers consisting of 113 number of MBBS doctors, 86 number of nurses and 46 number of other health practitioners. The study area consisted of 5 zillasadar hospitals and 15 upazilla health complexes.

## Attitude

The table 1 provides information about medical professionals' notion about the attitude of snake bite victims' family to where to go immediately after snake bite. The findings show that 60.1% of doctors, 50.0% of nurses and 56.8% of practitioners have a notion that the snake bite victims would go to Ozha followed by 11.5% of doctors, 4.7% of nurses and 11.4% of practitioners have a notion that they would go to the local healers and that of 26.5% of doctors, 41.9% of nurses and 32.9% of practitioners mentioned that the snake bite victims would go to doctors.

The table 2 provides information about medical professionals' perception regarding attitudes that are harmful traditions/measures which are not to be recommended after snake bite. The findings show that 69.0% of doctors, 64.0% of nurses and 56.8% of

Table1: Where Do Snake Bite Victims Go Immediate After Snake Bite

Immediate places visited for snake bite victims	Type of health service providers							
	Doctor		Nurse		Others		Total	
	Yes	No	Yes	No	Yes	No	Yes	No
Ozha	61.9%	---	50.0%	---	56.8%	---	56.8%	---
Local healers	11.5%	---	4.7%	---	11.4%	---	9.1%	---
Doctors	26.5%	---	41.9%	---	31.8%	---	32.9%	---
Non response	-		3.5%		-		-	

Table 2: Harmful measures not recommended after snake bite

Type of harmful measures after snakebite	Type of health service providers							
	Doctor		Nurse		Others		Total	
	Yes	No	Yes	No	Yes	No	Yes	No
Tight bandage	69.0%	22.1%	64.0%	24.4%	56.8%	27.3%	65.0%	23.9%
Suction of wound	67.3%	20.4%	65.1%	20.9%	68.2%	9.1%	66.7%	18.5%
Application in Wound	79.6%	13.3%	59.3%	27.9%	65.9%	13.6%	70.0%	18.5%
Unnecessary delaying	78.8%	8.0%	66.3%	17.4%	75.0%	6.8%	73.7%	11.1%
Induce Vomiting	71.7%	13.3%	55.8%	30.2%	63.6%	11.4%	64.6%	18.9%

Induce vomiting=Using herbal products like oil, ghee, pepper to induce vomiting;Application in Wound=Application of herbal medicine, stone, seeds, cow-dung, mud etc; Sucton of wound=Suction by mouth or chick

practitioners will recommend not to apply 'tight bandage' to victim's snake bite spot and 67.3% of doctors, 65.1% of nurses and 13.6% of practitioners will recommend not to apply 'Suction by mouth or chick' to victim's snake bite spot. And 79.6% of doctors, 59.3% of nurses and 65.9% of practitioners will recommend not to apply 'Herbal medicine, stone, seeds or cow-dung' to victim's snake bite spot. Again, 78.8% of doctors, 66.3% of nurses and 75.0% of practitioners will recommend not to do 'Unnecessary delaying' in taking the snake bite victims to proper health service center. Furthermore, findings show that 71.7% of doctors, 55.8% of nurses and 63.6% of practitioners will recommend not to use any 'Herbal products like oil, ghee, pepper' to snake bite victim to induce vomiting.

The table 3 provides information about medical professionals' perception about common attitudes found amongst the community/local people after the snake bite. The findings show that 84.1% of doctors, 64.0% of nurses and 77.3% of practitioners perceived that 'fear of bite again' prevails amongst the victims after snake bite. Again also, 73.5% of doctors, 47.7% of nurses and 77.3% of practitioners mentioned that snake bite victims 'avoid sleeping' for fear of snake coming back to bite again during sleeping. And 84.1% of doctors, 64.0% of nurses and 79.5% of practitioners mentioned that snake bite victims are also seized with 'panic disorder' after snake bite. And also 53.1% of doctors, 52.3% of nurses and 59.1% of practitioners mentioned that snake bite victims are also seized with continuous 'dream about snake' after snake bite.

Table 3: Common norms and attitude believed in respect of snake bite

Common norms and attitude in snake bite	Type of health service providers							
	Doctor		Nurse		Others		Total	
	Yes	No	Yes	No	Yes	No	Yes	No
Fear of bite again	84.1%	2.7%	64.0%	0.0%	77.3%	0.0%	75.7%	1.2%
Avoid sleeping	73.5%	5.3%	47.7%	9.3%	63.6%	9.1%	62.6%	7.4%
Panic disorder	84.1%	0.0%	64.0%	1.2%	79.5%	0.0%	76.1%	0.4%
Dream about snake	53.1%	5.3%	52.3%	7.0%	59.1%	4.5%	53.9%	5.8%

## Discussion

In the absence of any epidemiological survey data, there was a dearth of information about snake bite from Bangladesh<sup>6-9</sup>. During 1988-89, a small survey was conducted in 50 Upazillas (sub-districts) of Bangladesh recorded 764 occurrences of snake bite, of which 168 (22%) died<sup>10</sup>. A postal survey conducted in 21 of the 65 administrative districts in 1995–1996 estimated an annual incidence of 4.3 per 100,000 populations and a case fatality of 20%<sup>11</sup>. In this study, Chittagong Division and Barisal Division had the highest annual incidence of snake bites. These estimates were based on data from small studies and due to methodological limitations; the estimates were unlikely to be representative of the whole country population. Treatment of snake bite was largely dominated by traditional snake charmers (Ozha). People used to be content with their traditional methods of tight tourniquet, multiple incisions at bite site, application of herbal products and different rituals.

The findings from this survey study on snake bite have been elicited from face to face interview with 243 number of medical professionals/health service providers consisting of 113 number of MBBS doctors, 86 number of nurses and 46 number of other health practitioners. The study area consisted of 5 zillasadar hospitals and 15 upazilla health complexes.

The information about medical professionals' notion about the attitude of snake bite victims' family to where to go immediately after snake bite is recorded. The findings show that 60.1% of doctors, 50.0% of nurses and 56.8% of practitioners have a notion that the snake bite victims would go to Ozha followed by 11.5% of doctors, 4.7% of nurses and 11.4% of practitioners have a notion that they would go to the local healers and that of 26.5% of doctors, 41.9% of nurses and 32.9% of practitioners mentioned that the snake bite victims would go to doctors. The health professionals have the notion that the educated and informed people of locality would approach doctors immediately for treatment of snake bite victims. In a study<sup>5</sup> it has been reported that among snake bites 30 (60%) were venomous and 20 (40%) snake bite cases were non-venomous. The common victims were farmers (53%) and housewives (13%). The bites were commonly encountered during rural foot walking (32%) followed by sleeping (15%). 55% were bitten during outdoor and agriculture related activities. 65% had sustained bite in lower limbs. The majority (82%) of the snakebites were observed during the rainy season. Total 98% patients applied multiple tight

tourniquets in the affected limb. A common local practice (seen in 85%) was to receive pre hospital treatment from 'Ohzas'<sup>6</sup>.

The information about medical professionals' perception regarding attitudes that are harmful traditions/measures which are not to be recommended after snake bite are assessed. The findings show that 69.0% of doctors, 64.0% of nurses and 56.8% of practitioners will recommend not to apply 'tight bandage' to victim's snake bite spot and 67.3% of doctors, 65.1% of nurses and 13.6% of practitioners will recommend not to apply 'Suction by mouth or chick' to victim's snake bite spot. And 79.6% of doctors, 59.3% of nurses and 65.9% of practitioners will recommend not to apply 'Herbal medicine, stone, seeds or cow-dung' to victim's snake bite spot. Again, 78.8% of doctors, 66.3% of nurses and 75.0% of practitioners will recommend not to do 'Unnecessary delaying' in taking the snake bite victims to proper health service center. Furthermore, findings show that 71.7% of doctors, 55.8% of nurses and 63.6% of practitioners will recommend not to use any 'Herbal products like oil, ghee, pepper' to snake bite victim to induce vomiting. In sum, it observed that majority of health professionals are well informed regarding harmful traditions and measures that are not to be recommended as first hand methods to snake bite victims.

The information about medical professionals' perception about common attitudes that are found amongst the community/local people after the snake bite are recorded. The findings show that 84.1% of doctors, 64.0% of nurses and 77.3% of practitioners perceived that 'fear of bite again' prevails amongst the victims after snake bite. Again also, 73.5% of doctors, 47.7% of nurses and 77.3% of practitioners mentioned that snake bite victims 'avoid sleeping' for fear of snake coming back to bite again during sleeping. And 84.1% of doctors, 64.0% of nurses and 79.5% of practitioners mentioned that snake bite victims are also seized with 'panic disorder' after snake bite. And also 53.1% of doctors, 52.3% of nurses and 59.1% of practitioners mentioned that snake bite victims are also seized with continuous 'dream about snake' after snake bite. In sum, majority of health professionals observed that common attitudes mentioned above are still very prevalent amongst local community especially the snake bite victims. It implies that more of awareness programs and counseling sessions should be launched to reduce the common misconceptions and attitudes that prevail aftermath of snake bite amongst the snake

bite victims and community as a whole<sup>10-11</sup>.

There are some limitations of this study like unavailability of key stakeholders for interviewing and discussion slow down the process, time constraints and remote areas.

### Conclusion

Majority of health professionals are well informed regarding harmful traditions and measures that are not to be recommended as first hand methods to snake bite victims. Majority of health professionals observed that common attitudes mentioned above are still very prevalent amongst local community especially the snake bite victims. It implies that more of awareness programs and counseling sessions should be launched to reduce the common misconceptions and attitudes that prevail aftermath of snake bite amongst the snake bite victims and community as a whole.

### References

1. Islam MR. Vulnerability and coping strategies of women in disaster: a study on coastal areas of Bangladesh. *Arts Faculty Journal*. 2012;4:147-69
2. Kabir MI, Rahman MB, Smith W, Lusha MA, Azim S, Milton AH. Knowledge and perception about climate change and human health: findings from a baseline survey among vulnerable communities in Bangladesh. *BMC public health*. 2016;16(1):266
3. Seraj S, Rahmatullah M, Monjur-E-Khudha M, Aporna SA, Khan MS, Jahan R. Amulets and other uncommon treatments prescribed by traditional medicinal practitioners of the Bede community residing in Porabari village of Dhaka district, Bangladesh. *The Journal of Alternative and Complementary Medicine*. 2011;17(11):987-93
4. Warrell DA. Snake bite. *The Lancet*. 2010;375(9708):77-88
5. Mohapatra B, Warrell DA, Suraweera W, Bhatia P, Dhingra N, Jotkar RM, Rodriguez PS, Mishra K, Whitaker R, Jha P, Million Death Study Collaborators. Snakebite mortality in India: a nationally representative mortality survey. *PLoS Neglected Tropical Diseases*. 2011;5(4):e1018.
6. Pandey DP, Khanal BP. Inclusion of incorrect information on snakebite first aid in school and university teaching materials in Nepal. *Journal of Toxicology and Environmental Health Sciences*. 2013;5(3):43-51
7. Rahmatullah M, Ferdousi D, Mollik A, Jahan R, Chowdhury MH, Haque WM. A survey of medicinal plants used by Kavirajes of Chalna area, Khulna district, Bangladesh. *African Journal of Traditional, Complementary and Alternative Medicines*. 2010;7(2)
8. Harris JB, Faiz MA, Rahman MR, Jalil MM, Ahsan MF, Theakston RD, Warrell DA, Kuch U. Snake bite in Chittagong Division, Bangladesh: a study of bitten patients who developed no signs of systemic envenoming. *Transactions of the Royal Society of Tropical Medicine and Hygiene*. 2010;104(5):320-7
9. Hasan SM, Basher A, Molla AA, Sultana NK, Faiz MA. The impact of snake bite on household economy in Bangladesh. *Tropical doctor*. 2012;42(1):41-3
10. Hasan MN, Azam NK, Ahmed MN, Hirashima A. A randomized ethnomedicinal survey of snakebite treatment in southwestern parts of Bangladesh. *Journal of traditional and complementary medicine*. 2016;6(4):337-42
11. Biswas A, Haq WM, Akber M, Ferdousi D, Seraj S, Jahan FI, Chowdhury AR, Rahmatullah M. A survey of medicinal plants used by folk medicinal practitioners of PaschimShawra and Palordi villages of GaurnadiUpazila in Barisal district, Bangladesh. *American Eurasian Journal of Sustainable Agriculture*. 2011;5:15-22