

Original Article**Knowledge Regarding Snake Bite among Rural People in a Selected Area of Joypurhat, Bangladesh**Nasreen T^{1*}, Choudhury SA², Akhiruzzaman³, Nabila S⁴, Ferdowsi J⁵

1. Dr. Tahsina Nasreen, Assistant Professor, Department of Community Medicine and Public Health, TMSS Medical College Bogura.
2. Dr. Shamim Ahmed Choudhury, Professor, Department of Community Medicine and Public Health, TMSS Medical College Bogura.
3. Dr. Akhiruzzaman, Associate Professor, Department of Community Medicine and Public Health, TMSS Medical College Bogura.
4. Dr. Sammak Nabila, Lecturer, Department of Community Medicine and Public Health, TMSS Medical College Bogura.
5. Dr. Jannatul Ferdowsi, Lecturer, Department of Community Medicine and Public Health, TMSS Medical College Bogura.

Corresponding Author*Abstract**

Background: Snake bite is one of the alarming acute medical emergency resulting ill-fated unintended interaction between snake and human in Bangladesh. It is obligatory to enhance general wakefulness about its prevention and first aid management among the rural population which is still significantly slight. Proper knowledge can ease the mortality and morbidity of victims.

Objective: To assess the of knowledge regarding snake bite among rural people in a selected area of Joypurhat, Bangladesh.

Materials and Methods: It was a descriptive type of Cross-sectional study conducted at Kalai, Joypurhat district on September, 2025. Purposive sampling technique was adopted for selecting respondent's ≥ 18 years of age from rural population. Sample size was 287. Data were collected by face-to-face interview. A pre-designed, pre-tested, structured questionnaire was used, as a tool for collecting data. The questionnaire had four sections.

Results: The study revealed that, out of 287 respondents' majority belonged to the age group below or equal to 30 years were 77(26.83%). Females accounted for 40% of the study subjects, 51.57% of the respondents were housewife . 26.1% of respondents had no formal education. 75% reported that they had never witnessed a snake bite victim in the past. Among 287 respondents, 52% said commonly found snakes in their region were non-venomous. 47% of respondents supposed snake bite usually occur at night time whereas 44% said its usually at daytime. Majority, 193 (66.55%) opined snake usually bite during rainy season. 54% thought snake bite typically occur in paddy field so farmers were the high risk group. 69% were in favor of application of tight tourniquet immediately after bite . 56% preferred hospital treatment as an ideal, followed by traditional healer 26%. Majority of the respondents (68%) reported that they need to more enlighten on this topic. Study findings signify the need for further awareness programs for rural inhabitants to educate them on this neglected yet preventable public health emergency.

Conclusion: Still now rural people has unsatisfactory knowledge along with some misconceptions regarding this issue, necessary steps should be taken by the concerned authority to enhance appropriate treatment-seeking behavior highlighting the need for targeted public health interventions.

Keywords: Knowledge, Snakebite, Rural people.

Introduction

Snake bite is a significant but often ignored public health problems in rural Bangladesh. It represents a significant public health issue, especially in tropical and subtropical regions where snakes are prevalent and agricultural expansion is increasing.¹ The true incidence of snake bite in Bangladesh is unknown.² On June 9th, 2017 WHO categorized snakebite envenomation into the Category A of the Neglected

Tropical Diseases.³ WHO estimates that 81,000-138,000 deaths are caused by snakebite envenoming (SBE) annually and that about three times as many amputations and other permanent disabilities are attributable to snakebite envenoming.⁴ The burden of this disease is the highest in Africa, Asia and Latin America.⁵ Globally there are 2900 snakes' species of which about 600 are considered venomous.⁶ Most

deaths and serious consequence from snake bite are entirely preventable by making safe and effective anti-venomous more widely available and accessible.⁷ Objectives of the study was to assess the knowledge regarding snake bite among rural people in a selected area of Joypurhat, Bangladesh. The findings will be helpful for further public health interventions. This study was conducted as a part of Residential Field Site Training (RFST) programme and as a requirement of completing Community Medicine and Public Health Curriculum of Medical study.

Materials and Methods

Descriptive type of cross-sectional study was conducted among rural people at Parulia and Keshobpur villages of Kalai, Joypurhat district on September, 2025. The study population was rural people ≥ 18 years of age in the selected area irrespective of gender. Total collected data were 290, after sorting and cleaning, 3 data were discarded due to inconsistency. Purposive sampling of non-probability type was used for selecting sample. Sample size was 287. A pre-designed, pre-tested, structured questionnaire was used, as a tool for collecting data. The questionnaire consisted of 3(Three) separate sections as Socio demographic profile, Knowledge regarding snake bite and Sources of Information. 4th year MBBS students of TMSS Medical College, Bogura collected data by face to face interview under the supervision Community Medicine and Public Health Department. All participants were briefed about the process of data collection and assured about confidentiality of data. It was also emphasized that their participation was voluntary, and they have the right to withdraw at any stage throughout the research. Students (the data collector) translated questions into Bangla for better understanding of the participant. Permission was taken from concerned authorities before collecting data. The collected questionnaires were checked for any inconsistency or error, cleaned, edited, coded, and analyzed manually. Only descriptive study was done. Results were expressed as frequency and percentage and displayed in table and figure.

Results

Table I: Distribution of the Respondents Based on Socio-demographic Variables (n=287)

Variables	Frequency	Percentage (%)
Age (years)		
≤ 30	77	26.83
31 -40	64	22.23
41 -50	47	16.38
51 -60	50	17.42
>60	49	17.07
Gender		
Male	173	60
Female	114	40
Religion		
Muslim	171	59
Hindu	116	41
Educational qualification		
No formal education	75	26.1
Primary	53	18.5
Secondary	39	13.6
SSC	54	18.8
HSC	50	17.4
Others	16	5.6
Total	287	100

Above table shows that out of 287 respondents, 60% of respondents were male and 40% were female. 59% of the respondents were muslim. 26.1% of respondents had no formal education.

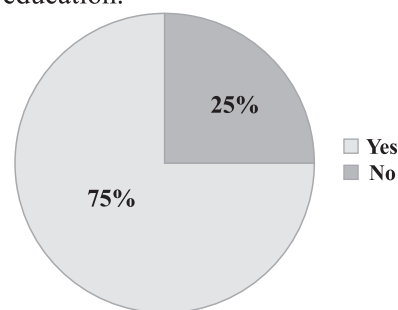


Fig 1: Distribution of the Respondents According to Experience of Household Member's Snakebite

Fig 1: shows that 75% of respondents said that they had never experienced snake bite.

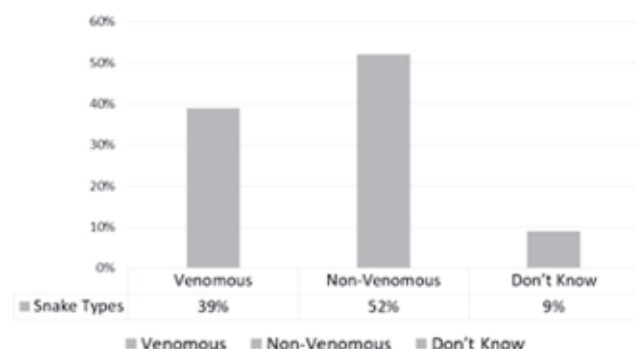


Figure 2: Distribution of the Respondents According to Knowledge of Commonly Found Snakes in Respondents' Region (n=287)

Among 287 respondents 52% said commonly found snakes in their region were non-venomous (Fig-2)

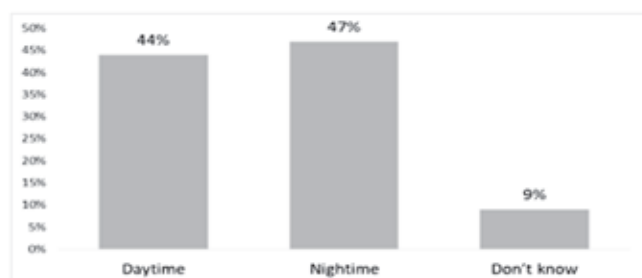


Figure 3: Distribution of the Respondents According to Knowledge of Usual Biting Time of Snake

Among the respondents, 47% said snake bite usually occur at night time and 44% of them said snake usually bite at daytime.

Table II: Distribution of the Respondents According to Knowledge of Usual Snake Biting Season (n=287)

Season	Frequency	Percentage (%)
Winter	03	1.05
Summer	83	29.65
Rainy season	193	66.55
Don't know	07	2.41
Others	01	0.34
Total	287	100

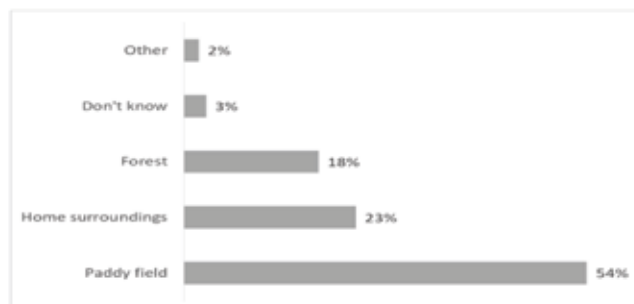


Figure 4: Distribution of the Respondents According to Knowledge of Most Common Snake Biting Place (n=287)

Above figure shows, majority of the respondents (54%) said snake bite usually occur in paddy field, 23% of them said snake bite occur at home surroundings.

Table III: Distribution of the Respondents According to Preventive Knowledge of Snake Bite (n=287)

Variable	Frequency	Percentage (%)
Keep the house and surroundings clean	155	54
Clear tall grasses, bushes near house	117	30
Seal holes and gaps in walls, floors & doors of house	78	20
Wear boots & long pants while working in fields	17	04
Use a flashlight or torch when walking at night or entering dark places.	74	19
Avoid putting hands into holes or water without looking	31	08
Don't sleep on the floor	45	12
Raise Awareness	26	07
Others	7	02

Multiple answers are given by the respondents.

54% of respondent's keep their houses and surroundings clean, 30% Clear tall grasses, bushes near house, 20% seal holes and gaps in walls, floors & doors of their houses, 19% use a flashlight or torch when walking at night or entering dark places as preventive measures of snake bite.

Table IV: Distribution of the Respondents According to First Aid Knowledge of Snakebite

Variable	Frequency	Percentage (%)
Apply a loose tourniquet	32	11
Apply a tight tourniquet	199	69
Cut the wound	12	04
Suck out the venom	9	3
Go to hospital	163	56
Traditional healer	77	26
Don't know	5	2
Others	5	2
Multiple answers are given by the respondents.		

From above table, 69% of the respondents said they should apply a tight tourniquet, 56% required to go to hospital, 26% desired to go to traditional healer, 11% wanted to apply a loose tourniquet, 4% thought they need to cut the wound as first aid management immediately after snakebite besides 2% of them didn't know about it.

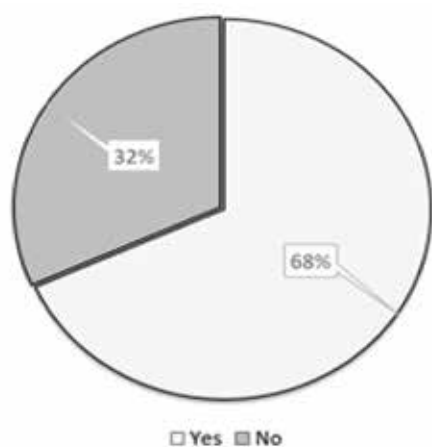
**Figure 5 : Distribution of the Respondents According to Need for More Information on This Topic (n=287)**

Figure 5 shows that 68% of respondents need more information on this topic.

Discussion

Present study reveals that the highest age group of respondents were below or equal to 30 years of age (26.83%), Females reported for 40% of the study subjects where 51.57% were housewife. 26.1% of respondents had no formal education. 52% of them said commonly found snakes in their region were non-venomous, 47% said snake usually bite at night, 66.55% reported snake typically bite during rainy season. 75% of them never experienced snake bite before. 54% of respondents said snake bite typically occur in paddy field so farmers were the high risk group. A study which has been conducted in Dhaka Medical College Hospital on snake bite reveals that 96.0% victims are farmers.⁸ In terms of preventive measures for snake bite, 54% of respondent's keep their houses and surroundings clean, 20% seal holes and gaps in walls, floors & doors of their houses. While these are valuable practices, the data suggests that knowledge of comprehensive environmental and behavioral prevention strategies may be limited. A significant portion 69% of this study said they should apply a tight tourniquet, 56% wanted to go to hospital, 26% thought they should go to traditional healer immediately after snakebite. A study that has been conducted in the rural people in Tirunelveli district of India shows that 62.5% people prefer hospital treatment and only 12.0 % prefer traditional treatment⁹. Another study which has been conducted by Silvia et al¹⁰ among the farmers in Srilanka reveals that 86.8% prefer hospital treatment which shows difference with the present study. Socio-economic factors and cultural views consequences trust on traditional healers, deferring active medical interference. A study conducted on 5 zilla sadar hospitals and 15 upazilla health complexes of Bangladesh where most of the health professionals (93.8%) stated that the existence of facilities in their respective hospitals is not adequate to manage the treatment of snake bite victims.¹¹ Its encourage the victim to take services with trust on traditional healers causing major barrier to receive timely and effective hospital management in Bangladesh. A survey conducted by Faiz et al. revealed that only 30% of snakebite victims sought

medical treatment from healthcare facilities.¹² Present study exposed that, deficit of preventive knowledge with treatment facilities availabilities against snake bite till now act as a major barrier causing degraded outcomes with delay access to medical attention.

Conclusion

It was important to assess the current knowledge and identify the preventive knowledge gap on snake bite and first aid management with the aim to frame future awareness programs for the rural community to prevent further mortality and morbidity resulting from snake bites. Our study findings would be a baseline data hopefully for further in depth large scale study. By enhancing community knowledge regarding this negligible issue can change remarkable preventive data in future. Government, non-government Policymakers should work together to overcome this burning problems by increasing availability of emergency management facilities in all healthcare points for the victims may reduces the believe in myths.

Future directions and research ideas

1. The small study population from selected villages was identified as the main limitation of the study, meaning that the study findings cannot be generalised.
2. Government should enhance the availability of proper treatment protocol with anti snake venom at all health care delivery level with appropriate training program regarding this issue.
3. Local health sectors should coordinate for implementing health education programs about this public health emergency.
4. The results obtained in this study could be used to guide strategic planning for Health sectors of Bangladesh.
5. It could be a wise idea to conduct large scale research.

Ethical Considerations

The project was approved by Community Medicine and Public Health department of TMSS Medical College, Bogura for Residential Field Site Training

(RFST) programme. The concerned authorities were informed and took permission for data collection with formal letters by the Head of Department of Community Medicine and the Principal of TMSS Medical College, Bogura, Bangladesh. All the respondents were briefed about the purpose and procedure of data collection.

Funding: The study was conducted without any funding, commercial or financial relationships.

Conflict of Interest- The authors confirm that there is no conflict of interest among the authors.

Acknowledgement

We express thanks to the beloved students of TMC-14 for collecting data as a part of their Residential Field Site Training (RFST) programme of Community Medicine and Public Health Curriculum. Authors also acknowledge the contribution of Prof. Dr. Azfarul Habib, Dr. Kutbul Zannat, Dr. Towhida Tasnim, Dr. Mejba –Ul- Hoque, Dr. Rubaida Akter for supervising the students during data collection.

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