

Students' perceptions on the snake in Northwestern Bangladesh

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Abstract. Jaman MF, Rabbe MF, Alam MM, Shome AR, Hossain MA, Sarker MAR. 2020. Students' perceptions on the snake in Northwestern Bangladesh. *Asian J Ethnobiol* 21: 62-69. Human-snake interaction has an ancestral history with different outcomes at different times. This study was done to assess the student's perceptions of snakes and current superstitions practiced in some areas of northwestern Bangladesh. We interviewed 348 students from 7 educational institutions under 3 districts from January 2019 to April 2019. We asked dichotomous (yes-no) question to know perceptions about snakes and variation among superstitions of the students. We found significant variation in responses concerning the demographic status of the respondents. Religion and education were the most influencing factors affecting the results of students' perceptions. Among the total respondents, 329 (94.5%) had seen snakes, 182 (52.3%) considered snakes as a notorious animal, 224 (64.4%) considered snakes as an economically harmful animal, 155 (44.5%) think killing snakes giving a good feeling, 313 (90%) believe that snakes attack humans, 321 (92.2%) students have seen others killing snakes, and 127 (36.5%) had killed snakes themselves. Of the five superstitions, "snake can drink milk" was the topmost statement believed by 293 (84.2%) students. Due to these negative attitudes and misconceptions, we assume that snakes are regularly killed, and there is a potential risk for the population to decline.

Keywords: Perceptions, northwestern Bangladesh, misconceptions, student, superstitions

INTRODUCTION

Bangladesh is a small country with diverse cultures and is rich in wildlife resources (Nishat et al., 2002). Reptiles occupy a significant position among them, and approximately 170 species of snakes are known to be present here (Khan 2008; Hasan et al. 2014; IUCN Bangladesh 2015; Khan 2015, 2018). Among them, in total, 100 species of snakes (67% species are non-venomous and 33% venomous) are assessed by the IUCN Red List Bangladesh (2015). Eight species are placed in the threatened categories.

The northwestern districts of Bangladesh are enriched with mainly agricultural and plain lands, rivers, canals, and some areas are covered with deciduous forests (Khan 2008; Khan 2015). A recent survey (Rabbe 2018) has shown that most snakes in this region face numerous anthropogenic threats. Among them, habitat destruction and fragmentation, road accidents, and killing by local people without any definite valid reason have posed severe threats to snakes leading to a drastic decline in their natural population (Hasan et al. 2014). In addition, human-snake conflicts due to snakebite incidences have placed them in a vulnerable position. Mondal et al.'s (2011) study in Rangpur medical college (a hospital in northwestern Bangladesh) showed that 5.71% of patients are killed due to snakebite.

People in various cultures are afraid of snakes, provoking a pronunciation and persecution that hampers conservation efforts for this group of reptiles (Babalola et al. 2020). Traditional practices to prevent snakebites and

treat snakebite probably kill snakes (Rahman et al., 2010), consequently leading to a decline in the natural population of snakes in the northwestern region. Snake phobia probably is the main reason for school children for killing snakes. Every year during the rainy season, snakebite incidences increase since the houses are made of homestead bush, making an ideal place for snakes (Rahman et al. 2010; Guidelines for the Management of Snakebite in Bangladesh 2018). Unfortunately, people in Bangladesh generally treat every snake as venomous, probably due to the lack of proper knowledge about snakes. The study of Rabbe (2018) showed that younger people of the northwestern region are intended to kill snakes just for fun, resulting in young individuals being more prone to snakebite. Faiz et al. (1999) also suggested that children in Bangladesh are at high risk of snakebite envenoming. Snakes and snakebite in Bangladesh have mythological fragrances leading to higher mortality (Global Snakebite Initiative 2020). Superstitions have dominated the mind of people; consequently, they go to *Ojha* (a person who traditionally treats snakebites and shows snakes for entertainment in markets and villages) for snakebite treatment (Alam et al., 2015). Among the superstitions, the jewel of the snakes' head, snakes dancing by whistle, and milk sucking of snake from cow are the most popular (Kabir 2018).

Snakes also bite humans and cattle when entering the home yard, leading to increased conflict with humans and risks to human life (Alves et al. 2012a, b). Moreover, traditional folk stories promote negative attitudes spreading fear and dislike among people in the community (Alves et

al., 2014). Negative perceptions are often dangerous for both people and snakes since it influences people to make irrational decisions that often cause snake deaths or an increased risk of snakebite, resulting in the low interest in the conservation of snakes (Alves et al. 2012b). The ethnobiological approach may be one way to investigate and establish relationships between the locals and provide scientific knowledge among the school children for conservation strategies of snakes (Baptista and El-Hani 2009).

Considering the above scenario and from an ethnozoological point of view, the present study is the first to investigate the perceptions and knowledge of students about snakes in the northwestern region of Bangladesh. This research examines students' perceptions and attitudes towards snakes and assesses superstitious practices.

MATERIALS AND METHODS

Problems, strategy, and variable assignment

Before starting the survey, we assessed superstitions practiced by the local people and set up our questionnaire accordingly. We divided the questionnaire into two segments-perceptions and superstitions (Table 1). We sorted the information in a series of questions and all questions were bi-category variables expressed as v_i ($i = 1, 2, \dots, 7$) and s_i ($i = 1, 2, \dots, 5$) in table 1. For perceptions, we collected responses by asking simply complex questions, i.e., the first perception variable (v_1) is about seeing snakes, while the last variable (v_7) is about killing snakes. The demographic background of the respondents, such as age, gender, education, religion, and social media usage, was also collected.

Sampling protocol and data collection

We conducted this study from January 2019 to April 2019 in seven institutions of five Upazilas under the Rajshahi institutions of Bangladesh's Rajshahi, Rangpur, and Natore districts (Table 2). Before selecting the Upazilas, we discussed with university students (University of Dhaka) from these districts and gathered information about attitudes, superstitions, snakebites, snake mortality, and other related information. Later, we selected the areas of the Upazilas through personally communicating with deliberate snake rescuers, wildlife biologists, and news reporters who worked in those areas. We also considered social media (Facebook) information for selecting the survey areas. For example, a popular Facebook group of Bangladesh named 'Deep Ecology and Snake Rescue Organization' continuously updates information about snakebites, snake rescue, and snake killing incidences. We selected institutions where students come from the areas of interest to conduct the survey (Table 2). The questionnaire was entirely close-ended, and 348 students were randomly sampled in this study. We surveyed students aged 14 to 20 and from 9th grade to Higher Secondary level. Students were informed about the aims and objectives of the questionnaire survey to encourage them to participate in the research.

147 (42.2%) were males among all survey respondents, and 201 (57.8%) were females. As for the age proportions, 157 (45.1%) were low aged (14-16 years), and 191 (54.9%) were high aged (17-20 years). With regard to religion, 308 (88.5%) were Muslims, 37 (10.6%) were Sonatons, 3 (0.9%) were Christians. The education level of the interviewees varied; 128 (36.8%) were secondary level (SSC) students, and 220 (63.2%) were higher secondary level (HSC) students. Among the respondents, 97 (27.9%) had access to social media, whereas 251 (72.1%) had no access.

Table 1. Variables with their denotations and code used afterward in the article

Category	Information (variable denotation)	Code
Demography	Age	14-16years = 1, 17-20years = 2
	Sex	Female = 1, Male = 2
	Religion	Islam = 1, Sonaton = 2, Christian = 3
	Education	9 th grade to Secondary School (SSC)= 1, Higher secondary (HSC)= 2
Perceptions	Internet	No = 1, Yes = 2
	Snake seen by the respondent (v_1)	No = 1, Yes = 2
	Snake is considered a notorious animal by the respondent (v_2)	No = 1, Yes = 2
	Snake harm their eco condition by preying on their domestic animals and by snakebite incidence (v_3)	No = 1, Yes = 2
	Respondent thinks killing snake gives a good feeling (v_4)	No = 1, Yes = 2
	Respondent thinks snakes attack humans (v_5)	No = 1, Yes = 2
	Respondent has seen the killing of a snake by other people (v_6)	No = 1, Yes = 2
Superstitions	Respondent killed a snake themselves (v_7)	No = 1, Yes = 2
	Snake bear snakestone (<i>Moni</i>) on the head (s_1)	No = 1, Yes = 2
	Snake can dance hearing the sound of flute played by snake charmer <i>Ojha</i> (s_2)	No = 1, Yes = 2
	Snake can drink milk (s_3)	No = 1, Yes = 2
	Snake takes revenge (if humans hurt one snake, another individual of the pair takes revenge) (s_4)	No = 1, Yes = 2
	Snakes have hair (<i>Dari</i>) on their skin (s_5)	No = 1, Yes = 2

Table 2. Institutions and locations where the survey was conducted

District	Upazila	Institution's name	Sample size
Rajshahi	Tanore	Koel High School	60
	Godagari	Premtoli Degree College	57
Natore	Singra	Satpukuria Dimukhi High School	52
		Kalam Degree College	38
Rangpur	Kaunia	Kaunia College	60
		Vayarhat Piaria Fajil Madrasah	40
	Mithapukur	Shukurer Hat High School	41

Data evaluation and analysis

The main focus of this survey will result in two significant findings; i) the killing of snakes is dependent on demographic and perception-related variables; ii) demographic responses are about superstitions and believing superstitions are correlated with each other. All demographic and perceptions responses (v1 to v6) are independent variables except v7, a dependent variable. We used multiple regression models to calculate the impact of independent variables on the dependent variable. The relations of perceptions, superstitions, and demography of the respondents were analyzed in a bivariate logistic model. Mutual correlation of superstitions and their impacts were analyzed using Kendall's tau-b coefficient.

RESULTS AND DISCUSSION

Perceptions towards snakes

Following the dichotomous method, we asked questions from simple to complex. Almost all the respondents (n=329, 94.5%) have seen snakes in their areas. This response significantly varied in sex, religion, and education (Table 3). The percentage of seeing snakes was higher for female students (97%), Sonaton followers (97.3%), and higher educated students (97.3%). The second question was whether the respondent considers a snake a notorious animal. This question was asked to know their primary attitudes towards the snake. Among the respondents, 182 (52.3%) were positive and considered snakes a notorious animal, and the response varied significantly only for religion (Table 3). Most of the students who follow the Sonaton religion do not consider snakes notorious animals. Instead, they are regarded as animals of religious importance. Sonaton followers believe the markings on the hood of cobras hailed from the god Vishnu (Wake 1873). We interviewed local Sonaton people and found that serpents are imagined as heavenly animals with the capacity to bless and curse. Snakes are also associated with women's fertility, healing, and familial prosperity; hence they are widely worshipped to obtain these blessings. The work of Alves et al. (2012a; 2014) showed that students have a widespread perception considering most snake species as being tarnished and poisonous, regardless of whether or not the particular snake possesses this characteristic. This is the same perception of a considerable part of the students interviewed, who affirmed they did not distinguish between venomous and non-venomous species.

Considering snakes as aggressive and dangerous animals is a serious fact to consider when implementing conservation plans since it stimulates snake killing, regardless of whether or not they are poisonous (Alves et al., 2014).

The next question was about the impact of snakes on their daily life. We asked respondents if snakes do economic damage, like eating their domestic animals (especially chicken), snakebites to human and domestic animals, etc. We found that 224 (64.4%) respondents considered snakes an economically harmful animal and experienced some damage from it. This response varied significantly by the respondent's religion (p= 0.003).

We wanted to know the psychological perception of snake killing or seeing the killing of snakes. Snake killing by themselves or seeing them killed by others may give psychological pleasure, and we asked about it to the students. In total, 155 (44.5%) respondents responded positively, but their responses varied significantly in age, religion, and education (Table 3). Muslims believe snake killing is religiously good, and the respondents practice this belief. Our result reflects that Muslim students who are low aged and educated at lower levels were more favorable to this response (v4) (Table 3).

'Snakes attack humans' is a widespread belief to all people, and we asked students to record their responses about it. We received almost 90% positive responses corresponding to this question, and this response was significant considering age, religion, education, and internet use (Table 3). The next question pair was 'respondents have seen the killing of the snake' and 'respondent killed by themselves.' Among the respondents, 321 (92.2%) students had seen others had killed snakes, and 127 (36.5%) killed themselves. The first response varied significantly with age and educational status, while the second response varied substantially with sex, religion, and internet use (Table 3). Pandey et al. (2020) suggested that people kill snakes when they encounter them. The study also reported that school students' snake-killing attitudes are acute when they face snakes indoors or outdoors, such as in the yard or backyard and on roads. Ethnozoological research revealed that this perception contributes to negative behavior regarding these animals (Alves et al., 2014). The study showed that students assuming eventual encounters with snakes, almost half of the students (n= 53, 49%) responded in such a way that indicates that they would kill the animal. The study also found that female students were more prone to kill snakes than males, which does not match our results (15.4%

female killed snakes). This was probably due to their fear of snakes. Usually, females are more fearful of snakes than males (Prokop et al., 2009). However, Alves et al. (2014) and Pandey et al. (2020) researched students' attitudes toward snakes. They verified that many students showed positive attitudes about snakes' ecology and economy. This study also reported similar results from the students, such as 'students believed snakes are useful to the ecosystem' and 'snakes are necessary for producing antivenom.' This study mostly received these positive responses from highly educated Sonaton followers and internet users. Indeed, more fantastic core excellent knowledge and awareness about snakes and their ecological and utilitarian roles decrease the fear and negative attitudes toward snakes (Pandey et al. 2020). Frequent exposure of people with scientific and environmental educational activities about venomous snakes and their ecological roles seems to have been influential for the higher tolerance to snakes (Gramza and Temple 2010; Pandey et al. 2020).

Impact of factors on killing snakes by the respondents

Different demographic statuses had other effects on students' perceptions of snakes, as seen in Table 4. To better understand the effects of all factors on a particular variable (dependent), such as demographic variables, other related independent variables need to be considered

The regression analysis showed that sex, religion, v1, v4, and v6 significantly impacted the dependent variable (Table 4). The odds ratio for the dependent variable is

(1.684-1) = 0.684 times higher for male students, (0.788-1) = -0.269 times higher for Sonaton students (1.349-1) = 0.349 times higher for students who had seen snakes (v1), (1.216-1) = 0.216 times higher for students who think killing snake gives a good feeling (v4), and (1.197-1) = 0.197 times higher for students who had seen killing snake by others (v6), keeping all other predictors at a fixed level (Table 4). This result suggested that male respondents and followers of Islam and the Christian religion are more likely to kill snakes. Besides, students who had positive responses towards some independent variables, for example, v1, v4, and v6, are proportionally positive in their attitude toward killing snakes. Generally, animal phobia is higher among females and younger individuals (Fredrikson et al. 1996). Previous research by Prokop et al. (2009) also showed that most respondents (n= 66; 61.1%) were fearful of snakes, and fear of snakes was higher in females than in male students. A similar result was reported for female respondents for other animals such as spiders and bats (Prokop and Tunnicliffe 2008). Being less fearful, male students are more interested in killing snakes that match this study also. Different cultures and religions consider snakes deadly venomous, resulting in fear of snakes (Molander et al., 2012). Our study also found that students other than the Sonaton religion intended to kill a snake. Sonaton people believe that snakes (especially Cobra) are a deity. Hence, they usually do not kill any snakes. People following other religions possess false ideas about snakes and think killing them is religiously good.

Table 3. Student's perceptions towards snakes about the different demographic status of the respondents

Perceptions variables	Yes percentage, χ^2 , and p-value	Demographic variables										
		Age		Sex		Religion			Education		Internet	
		14-16	17-20	Male	Female	Islam	Sonaton	Christian	SSC	HSC	Yes	No
v1	Yes	93.6	95.3	91.2	97.0	94.8	97.3	33.3	89.8	97.3	96.9	93.6
	χ^2	0.459		5.646		22.360			8.652		1.46	
	p	0.498		0.017		0.000			0.003		0.227	
v2	Yes	50.3	53.9	47.6	55.7	54.5	29.7	100	53.1	51.8	48.5	53.8
	χ^2	0.450		2.234		10.914			0.055		0.797	
	p	0.502		0.135		0.004			0.814		0.372	
v3	Yes	65.6	63.4	60.5	67.2	66.9	40.5	100	65.6	63.6	57.7	66.9
	χ^2	0.191		1.622		11.669			0.140		2.582	
	p	0.662		0.203		0.003			0.709		0.108	
v4	Yes	50.3	39.8	49	41.3	47.1	18.9	100	55.5	38.2	40.2	46.2
	χ^2	3.866		2.031		14.371			9.789		1.023	
	p	0.049		0.154		0.001			0.002		0.312	
v5	Yes	93.0	85.3	89.1	88.6	90.6	73	100	93.8	85.9	83.5	90.8
	χ^2	5.072		0.027		10.678			4.999		3.779	
	p	0.024		0.870		0.005			0.025		0.052	
v6	Yes	88.5	95.3	90.5	93.5	92.5	89.2	100	87.5	95	91.8	92.4
	χ^2	5.491		1.108		0.770			6.360		0.045	
	p	0.019		0.292		0.680			0.012		0.832	
v7	Yes	33.1	39.3	65.3	15.4	39.3	13.5	33.3	38.3	35.5	57.7	28.3
	χ^2	1.404		91.160		9.480			0.279		26.173	
	p	0.236		0.000		0.009			0.597		0.000	

Table 4. Estimates of regression parameters with standard error (SE), p-value, and odds ratio (OR) were obtained from the logistic regression model

Variables	Category	Estimates	SE	P-value	OR
Age	(Intercept)	0.520	0.132	<0.001	1.683
	14-16	-	-	-	-
	17-20	0.051	0.056	0.369	1.052
Sex	Female	-	-	-	-
	Male	0.521	0.055	<0.001	1.684
Religion	Islam	-	-	-	-
	Sonaton	-0.238	0.070	<0.001	0.788
Education	Christian	0.043	0.235	0.854	1.044
	SSC	-	-	-	-
Internet	HSC	-0.020	0.059	0.741	0.981
	No	-	-	-	-
v1	Yes	-0.018	0.061	0.772	0.982
	No	-	-	-	-
v2	Yes	0.299	0.098	0.003	1.349
	No	-	-	-	-
v3	Yes	0.011	0.046	0.805	1.012
	No	-	-	-	-
v4	Yes	0.022	0.048	0.641	1.023
	No	-	-	-	-
v5	Yes	0.195	0.047	<0.001	1.216
	No	-	-	-	-
v6	Yes	0.093	0.070	0.184	1.098
	No	-	-	-	-
	Yes	0.180	0.079	0.024	1.197

Table 5. Kendall's tau-b coefficient results of superstitions about snakes with a p-value in the first parenthesis

Superstitions	s2	s3	s4	s5
s1	0.494 (<0.001)	0.304 (<0.001)	0.246 (<0.001)	0.122 (0.024)
s2		0.272 (<0.001)	0.332 (<0.001)	0.076 (0.156)
s3			0.280 (<0.001)	-0.007 (0.902)
s4				0.085 (0.115)

Superstitions about snakes

The student possesses many superstitions about snakes traditionally and a belief in one superstitious related to believing others. These traditional misbeliefs or misconceptions towards snakes are likely to cause snakebites (Pandey et al. 2020). Alves et al. (2012b) showed that myths and tales unrelated to religion contribute to the persecution of snakes in the Brazilian semi-arid region. Besides, cinemas showing traditional snakebite treatments through magic potions, snakestones, or alcohol influence believing firmly in superstitions (Henderson and Dujon 1973).

Table 5 shows the correlation of superstitions variables that have 10 variable pairs. The dual-trail verification at the

significance level $p < 0.001$, the correlativity between s1 and s2 demonstrates the maximum of 0.494, indicating a reasonably considerable overlap in believing the two superstitions. This means students consider 'snake bear snake stone' (s1) is significantly correlated with 'snake can dance hearing the sound of the flute played by snake charmer *Ojha*' (s2). The second maximum is 0.332 between s2 and s4, implying that the higher belief of s2, the higher the chance of believing s4. All superstitions variables are significantly correlated with other superstitions variables at $p < 0.001$, except for s5 (Table 5).

Snake bear snakestone (*Moni*) on the head (s1)

About half ($n = 179$, 52%) of the respondents believe snake bears snakestone (s1). The response for this superstition significantly varied among sex and internet usage of the students (Table 6). The result showed that female students believed s1 more than males, and respondents who do not use the internet are inclined to believe s1.

People believe snakes make snakestone with magical properties, and snakes can bear it on their heads. People also believe that snakestones can heal snake bites and act as anti-venom. However, experimental studies showed that snakestones are unreliable for snakebite treatment (Chippaux et al., 2007). This indigenous first-aid treatment has been practiced in Asia, Africa, and Latin America (Baldwin 1995). This stone is considered valuable as a diamond, and getting it in one's lifetime is deemed good fortune. All these misconceptions are provided by *Ojha*, as well as the influence of mythical cinemas telecasted on different TV channels.

Snake can dance hearing the sound of flute played by *Ojha* (s2)

More than half ($n = 191$, 55%) of the respondents believed snakes could hear the flute's sound and, consequently, dance with the tune. Responses to this superstition varied significantly with all demographic variables except religion (Table 6). The result showed that low-aged, female respondents, less educated, and do not use the internet are prone to believe s2. This is one of the prevalent superstitions about snakes in Bangladesh (Kabir 2018). When the *Ojha* plays the flute showing his particular movements, the snake follows those signals, observing the flute or other activities to sense a threat. Sometimes snakes pretend to bite for protection, but actually, these are dry bites.

Snake can drink milk (s3)

Of the 348 respondents, 293 (84.2%) believed that snakes could drink milk as their food. This is the highest believed superstition among students, and the response significantly varied among sexes and internet usage of the students (Table 6). Female respondents (88.6%) believed this superstition more than males, and 87.3% of the respondents who do not use the internet believed this superstition.

Table 6. Superstitions practiced by respondents about snakes about the different demographic status

Superstitions variables	Yes, percentage, χ^2 , and p-value	Demographic variables										
		Age		Sex		Religion			Education		Internet	
		14-16	17-20	Male	Female	Islam	Sonaton	Christian	SSC	HSC	Yes	No
s1	Yes	56.1	47.6	40.1	59.7	51.3	54.1	33.3	56.3	48.6	35.1	57.8
	χ^2	2.438		13.012		0.497			1.878		14.454	
	P	0.118		0.000		0.780			0.171		0.000	
s2	Yes	63.1	48.2	44.9	62.2	55.5	51.4	33.3	65.6	48.6	32	63.7
	χ^2	7.715		10.252		0.799			9.432		28.548	
	P	0.005		0.001		0.671			0.002		0.000	
s3	Yes	82.8	85.3	78.2	88.6	84.4	83.8	66.7	89.1	81.4	76.3	87.3
	χ^2	0.417		6.803		0.709			3.604		6.318	
	P	0.518		0.009		0.702			0.058		0.012	
s4	Yes	54.1	57.1	51.7	58.7	55.8	59.5	0.0	57.8	54.5	47.4	59
	χ^2	0.299		1.689		3.987			0.350		3.778	
	P	0.584		0.194		0.136			0.554		0.052	
s5	Yes	10.8	19.9	19	13.4	16.6	10.8	0.0	12.5	17.7	21.6	13.5
	χ^2	5.324		2.012		1.388			1.662		3.453	
	P	0.021		0.156		0.500			0.197		0.063	

Respondents shared this traditional belief. People claim that snakes come to barns at night to drink milk from the cows. But, the myth is false and can easily be explained. Barns often attract rats, which are the primary food source of many snakes. Snakes come to predate rats, and if a farmer sees snakes around the barn on a day when milk production is low, he may believe this myth. Additionally, *Ojha* propagates the belief that snakes drink milk. Drinking milk is a religious belief established by the Hindus (Sonaton) as they use milk to shower *Shibmurti* (incarnate) during *Nagpuja* (a religious ritual). The myth of the *Naga* refers to heavenly snakes with numerous heads believed in both Hinduism and Buddhism (Wake 1873). However, when the snake is quite thirsty, it can be seen drinking any readily available liquid food, including milk. Pathak and Metgud (2017) study found that 76.25% (n= 305) of respondents offer milk to snakes brought by local snake charmers on the *Nag Panchami* festival.

Snake can take revenge if hurt (s4)

Among 348 respondents, 194 (55.7%) answered “yes” to the question that snakes can take revenge if hurt by anyone. The response was higher for tall, aged, female, Sonaton, less educated, and not using the internet but not significant with any demographic status (Table 6). People believe that snakes live in pairs, and if a man wounds one, the other can go for the same man and take revenge. These mottoes are practiced by people, especially in Bengali and Hindi mythical cinemas. Snakes cannot identify the same person; it is more likely to see snakes in pairs during the breeding season or if the habitat is suitable enough to support many snakes (Stanley 2008).

Snake has hair (*Dari*) on its skin (s5)

Only 55 students believe snakes have hair (*Dari*) on their skin (s5). This response varied significantly between the two age groups; 19.9% of high-aged students thought that snake has hair on its skin, whereas only 10.8% low

aged students believed this superstition. Snakes molt for growth, and some parts of the skin may be attached to the skin while molting. People of the study areas considered it hair (*Dari*), and *Ojha* keeps the molted skins to show people when they entertain them.

In conclusion, people usually think all snakes are venomous and fatal. Furthermore, they bear and practice many preconceptions, misconceptions, and misbeliefs about snakes. As a consequence, many people are frequently involved in killing snakes as well as destroying their habitats. Our study proves that many students perceive snakes as harmful and dangerous animals, and most students show antipathy. These perceptions encourage negative attitudes, especially related to the attempts to kill snakes whenever one is found. These negative attitudes can be a potential threat to snakes. This might be due to the lack of knowledge about these animals and conservation awareness. We found many unaware people who do not know about the role of snakes in the ecosystem, and we consider this one of the main reasons for killing snakes. The same situations occur in Bangladesh and different locations worldwide, making snakes among the most disliked animals (Opler 1945; Molander et al. 2012; Alves et al. 2014). Meanwhile, many students responded to positive aspects of snakes, highlighting their ecological and economic importance. This positive perception, in turn, may help for the conservation of snakes. Therefore, students, teachers, and local people should be encouraged to come forward to conserve snakes. Makashvili et al. (2014) showed that effective teaching and education with other approaches help reduce snake fear.

The severe increase in human population pressure and agricultural development in the northwestern Bangladesh region. As a result, further research and investigation of people’s perceptions of snakes are needed to ensure that a threat category is not triggered in the future for the decline of the snake population. The benefit of wildlife, especially snakes, is increasingly recognized worldwide (Babalola et

al. 2020). Therefore, dissemination of public information and education about snakes, their value, and the consequences of human activities on local biodiversity are required (Alves et al. 2012b; Trombulak et al. 2004). This is because education can play a crucial role in informing people about organisms and the environment, which can help to develop more responsible attitudes towards animals (Kellert 1996). Snakes naturally prey on large amounts of insects and rodents, thus controlling their population and thus translating into economic benefits for the national economy (Zug 1993; Adeola 1992). All these facts suggest that conservation strategies for snakes should consider the interactions and perceptions of the local population towards this animal group. We addressed the respondents' major misbeliefs, misconceptions, preconceptions, and traditional beliefs. Therefore, our study has undoubtedly increased awareness among the respondents that may help develop responsible attitudes and behaviors, thus promoting the cessation of snake killing.

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