THE IMPACT OF SNAKE BITE ON HOUSEHOLD ECONOMY IN BANGLADESH

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Introduction

Snakebite is an age old acute emergency situation in Bangladesh

- In excess of 3 million bites per year with more than 150,000 deaths occurs worldwide.
- In India 15000-30000 deaths occur due to snake bite annually.
- In Bangladesh approximately 4.3 bites per 100,000 population takes place, with around 2000 deaths occurring annually.
In Bangladesh, there is no available methods for detection of venom-antigen for routine clinical practice.

Based on clinical criteria of envenomation, polyvalent anti snake venom, the specific drug for the treatment for the venomous snake bite is provided depending on availability.

The anti snake venom (ASV) is not manufactured in Bangladesh.
The supply of ASV in public hospital is irregular and is not available in private hospitals or even in private market as well, even if it is available, often not affordable by the patients party who are poor.

out of pocket health care expenditure is increasingly recognized as an important contributor to impoverishment
Objectives

1. To assess the different types of costs for treatment of snake bites patients;
2. To quantify the household economic impact; and
3. To understand the coping mechanism associated with such health hazard.
Methodology

- This is a prospective and descriptive study
- Total 83 snakebite patients admitted from June 2006 to October 2006 for treatment in four tertiary level hospitals namely Dhaka, Chittagong, Khulna, and Rajshahi medical college.
- The patients were interviewed using structured questionnaire documenting history, clinical features, treatment seeking behavior, health care related expenditures and the way in which the expenditures were covered.
Cost related to snakebite included direct cost (service provider fees, drugs, diagnostic cost and others), indirect costs (transport, attendant cost, food cost etc.), and opportunity costs (wages loss).

Inclusion criteria:

- Patient or someone else saw the snake at the time of bite.
- More suspicion of snake bite i.e. sign and symptom of venomous snake bite, bite mark, circumstances.
Result

- Among the patients 71.1%(n=83) were male and 29.9% were female,
- 54.2% of the snakebites were non venomous and 45.8% were venomous
- Snakebite occurred during walking on the way (22.9%) and during sleeping (16.9%)
- 68.7% of the patients have seen the snake and among them 22.9% could mention the name of the snake.
Majority (65.1%) of the patients went to visit a traditional healer (Ohzas)

A significant number (92.8%) of the patients used tight tourniquet after snakebite.

Bite marks were visible in 60.2% of the patients (n=50).

Among the patients 42.2% (=83) were given polyvalent antivenom
Total (Both) expenditure related to snakebite varies from Taka 242 to Taka 153,700 with a mean of Taka 8305 and mean income loss was Taka 5631. Expenditure for venomous snakebite was (Taka 15,479) about 7 times higher than non venomous snakebite (Taka 2248).

Among the households with snakebite 61.4% lend money to meet up the cost of the treatment. A very few of them mortgaged land and business. 3.6% (n=3), sold ornaments and 4.8% (n=4) sold livestock to compensate the treatment cost.
Table-1. Mean expenditure by category for 83 snake bite patients, Bangladesh

<table>
<thead>
<tr>
<th>Type of expenditure</th>
<th>Non-venomous (n=45)Mean (range)in Taka</th>
<th>Venomous (n=38)Mean (range)in Taka</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditures for services &amp; medicine</td>
<td>825( 145-7000)</td>
<td>9517 (300-137000)</td>
</tr>
<tr>
<td>Laboratory charges</td>
<td>48( 0-1080)</td>
<td>521( 0-6000)</td>
</tr>
<tr>
<td>Communication cost</td>
<td>807(50-4500)</td>
<td>2558(200-6000)</td>
</tr>
<tr>
<td>Expenses for attendant</td>
<td>504(50-5000)</td>
<td>2489(70-21500)</td>
</tr>
<tr>
<td>Additional food cost</td>
<td>50(0-1050)</td>
<td>291(0-3000)</td>
</tr>
<tr>
<td>Daily wages loss</td>
<td>245(0-1800)</td>
<td>1755(0-60000)</td>
</tr>
<tr>
<td>Total expenditure for treatment</td>
<td>2058(242-9000)</td>
<td>15890(900-148000)</td>
</tr>
</tbody>
</table>
Discussion and conclusion

- Majority (71.1%) of the snake bite patients were male which may be related to the fact that male are usually work out side the home.

- More than fifty percent (542%) of the snake bite were found non-venomous which is concordant with the venomous and non-venomous snake population.
It is interesting that still a significant number (65.1%) of the snake bite patients visited the traditional healers (Ohzas) after snake bite which was dangerous and contributes to morbidity following snake bite. It may be due to superstition or lack of knowledge about the scientific treatment of snake bite.
The cost of treatment for snake bite ranges from Taka 242 to Taka 153,700. with a mean of Taka 8,305 and mean income loss was Taka 5,631. This indicates that following snake bite, involves huge manpower and wealth which causes a major economic burden in affected families especially in venomous snakebite cases. This may impoverish the family and affect the other household expenditure for education, food and nutrition.
Appropriate measures should be launched for prevention and treatment of snakebite in vulnerable areas and arrange for training of traditional healers (Ohzas) to prevent gained economic loss and valuable life.
Acknowledgement
Thank you