

Visceral Leishmaniasis Related Knowledge, Attitude and Practices in Rural Endemic Villages of Eastern Nepal

Joshi A. B., PhD*

Abstract

Introduction	Visceral leishmaniasis (kala-azar) is one of the major vectors borne disease in Nepal. Since the initiation of formal recognition, a total of 15899 cases and 346 deaths have been reported during 1980-2000. In Nepal, the kala-azar is caused by the parasite <i>L. donovani</i> and identified as only parasite causing kala-azar both in India and Nepal.
Objective	A qualitative study to investigate kala-azar related knowledge, attitude and practices that may be relevant for the design of appropriate health education and control program was conducted in an endemic rural Village Development Committee of Southern Nepal.
Methods	The study was conducted in Devipur Village Development Committee, which is one of the kala-azar endemic areas in eastern terai of Nepal. According to the data of 1991-population census, a total of 3241 population is living in the entire VDC. The study was qualitative in nature and was conducted in December 1994 to February 1995 and follow-ups were made during 2001-2002. Kala-azar diagnosis, in-depth interviews and focus group discussions were used for the data collection. For sampling, any house having an individual positive for VL was considered a positive household. Past history results and current positive cases were assessed separately to assess the relationship between disease status and different anticipated risk variables.
Results	The study found that villagers were familiar with the name of the disease kala-azar and majority of respondents knew at least one manifestation of the disease, which was very important. However, majority of people did not know about the disease risk factors, benefits of protective devices, disease transmission etc. More than 95% of the respondents told that patient should be taken to the medical doctor if one contracted the disease but in practice, they prefer to treat the patients nearby by quacks rather than medical doctors. People's practice on using bed-net in different seasons, their interest of use and its financial burden was also assessed in this research.
Conclusion	The present study showed that despite some knowledge of the kala-azar disease, the residents were still being infected, as evidenced by the number of active cases detected in this study during examinations. A high proportion of households had previous knowledge of the disease and all positive households during the examinations responded with knowledge of the disease. The gap between the knowledge, attitude and practices was recognized. Therefore, it is very necessary that the people in the endemic areas need to be made well known or informed about the disease and use of preventive measures against the vector borne diseases for the successful control of the disease like malaria, kala-azar, lymphatic filariasis etc.
Key Words	Visceral leishmaniasis, Knowledge, Attitude, Practices, Siraha district.

Introduction

Leishman and Donovan first described kala-azar in 1903. Both of these physicians separately but simultaneously discovered parasites in the spleens of patients suffering from a malaria-like illness, which became known as Visceral Leishmaniasis.

Prominent in the Old World, and better known in those areas as Kala-azar, it is the most severe manifestation of a group of diseases known as the Leishmaniasis¹. As of 1994, the World Health Organization reported that approximately 12 million people worldwide were infected with some form of

* Associate Professor, Institute of Medicine, Tribhuvan University.

Leishmaniasis, and a further 350 million were at risk of acquiring the disease².

Visceral leishmaniasis (kala-azar) is one of the major vectors borne disease in Nepal. Since the initiation of formal recognition, reporting and treatment system, a total of 15899 cases and 346 deaths have been reported during 1980-2000 (unpublished data). Still 5.5 million people live in the kala-azar affected districts of the country³. Most of these districts, bordering with Bihar State of India, have already been established as one of the severely afflicted areas. In Nepal, the kala-azar is caused by the parasite *L. donovani* and identified as only parasite causing kala-azar both in India and Nepal.

The World Health Organization recommends curtailing outdoor activity after dusk, wearing of protective clothing and insect repellent, the use of fine mesh screens on windows, doors, and as bed nets. These preventative measures recommended by the World Health Organization are certainly proper, however, when examined in light of the economic situation of those involved, nearly all are doomed to failure⁴.

Little is known about how individuals and communities in rural areas of Nepal that are endemic for kala-azar perceive the disease and its management⁵. But, successful control of kala-azar like that of many other infectious diseases, depends to a great extent on community-wide understanding of and support for the program⁶. To design socially acceptable and culturally compatible control strategies, and to attain community participation, researchers and health personnel must be familiar with people's perceptions, knowledge and their practices in relation to kala-azar. This study examines the perceptions, attitudes and practices that is related to kala-azar in highly endemic communities in southeastern Nepal.

Materials and Methods

Study Area

Devipur Village Development Committee is one of the kala-azar endemic areas in eastern terai of Nepal. The VDC is composed of four different settlements named Devipur, Mushahari, Tilasi and Gauraha. According to the data of 1991-population census, a total of 3241 population is living in the entire VDC. The village houses are single story, stick and mud walled and roofed with thatch and in some cases with tiles as well.

Data Collection and Analysis

The study was qualitative. Focus group discussions and in-depth interview were used for the data collection. The study was conducted in December 1994 to February 1995.

The research objectives and methods were explained to the residents, and oral informed consent was obtained from the volunteer participants before data were collected.

For sampling, any house having an individual positive for VL, was considered a positive households. Past history results and current positive cases were assessed separately to assess the relationship between disease status and different anticipated risk variables.

Structured and semi-structured questionnaires were administered to the respondents and the collected data were deliberately analyzed for the statistical purposes by using EPI6 program.

Results

Knowledge

Table-1 Knowledge of Kala-azar

Knowledge of VL	Respondents N=512 (%)	VL Past history N=223 (%)
Knowledge of VL		
Yes	499(97.5)	221(43.2)
No	13(2.5)	2(0.4)
Knowing sign and symptoms		
Headache	11(2.1)	5(0.9)
Fever>2 weeks	329(64.2)	176(34.4)
Pigmented skin	26(5.1)	16(3.1)
Enlarge spleen	19(3.7)	11(2.2)
Did not know	127(24.8)	15(2.9)
Knowing VL risk factors		
Not using mosquito nets	75(14.6)	35(6.8)
Not keep him clean	82(16.0)	35(6.8)
Not have good house	10(2.0)	9(1.8)
Sleep with VL patients	15(3.0)	6(1.2)
Did not know	330(64.4)	138(27)
Protective devices		
Use of mosquito nets	153(29.9)	59(11.5)
Use household spray	65(12.7)	35(6.8)
Use fire	113(22.1)	59(11.5)
Use VL drug	7(1.4)	4(0.8)
Did not know	174(34)	66(12.5)
Knowing benefit of mosquito net		
Protect mosquito bite	379(74.0)	162(31.6)
Protect sandflies bite	3(0.6)	2(0.4)
Did not know	130(25.4)	59(11.5)
Knowing VL transmission		
Sleep with VL patients	114(22.3)	54(10.5)
Bite by infected sandflies	11(2.1)	6(1.2)
Bite of mosquitoes	42(8.2)	19(3.7)
Did not know	345(67.4)	144(28.1)

A high proportion (97.5%) of households had previous knowledge of the disease and all positive households during the examinations had responded with knowledge of the disease.

A high number (43.2%) of respondents, who had past history of the disease had previous knowledge of the disease. All active VL positive households 30 (5.8%), in the initial 13 (2.6%) and follow up 17 (3.3%) examinations responded that they knew about the disease. Knowledgeable household's members were found positive during subsequent examination period.

Persons in the households were asked about the sign and symptoms of the disease. A majority, 329 (64.3%) responded "fever more than a week". Second highest response, 127 (24.8%) was "no knowledge about sign and symptoms of the disease". Twenty-six (5.1%) responded "pigmented skin". The result shows that majority of them knew of at least one of the signs of the disease. The disease was equally distributed among all respondents.

Respondents were asked about the risk factors for disease transmission. Of the total, 82 (16%) respondents "had bad personnel hygiene" and 75 (14.6%) "did not use mosquito nets". Very few responded with "not having good houses and sleeping on the floor" or "sleeping with VL patients" are the possible risk factors of the disease. A majority 330 (64.4%) did not know about any of the risk factors for the disease. A majority 499 (97.5%) claimed that they knew the disease but were not aware of risk factors for the disease.

Respondents were asked to list the protective measures for VL control. Responses were as follows: 153 (29.9%) used mosquito nets, 65(12.7%) used households spray, 113 (22.1%) used fire, 7(1.4%) used visceral leishmaniasis drugs and 174(34.0%) responded "did not know". The respondents using different protective devices had a past history of VL and were presently detected positive for the disease. This suggests that knowledge of protective measure does not necessarily correspond with preventive practices for the disease.

Respondents were evaluated for knowledge regarding the benefits of using mosquito nets. A majority 379 (74%) responded that they would protect from mosquitoes. One hundred thirty (23.4%) responded that they did not know. A few, 3(0.6%) responded, that they could be used for protection against sandfly bites. They believed that it could only be used to prevent mosquito bites. Knowledge about mode of transmission was also assessed. Only 11(2.2%) knew the correct mode of transmission of the disease. Twenty two percent reported sleeping with a VL patient. A majority (67%) responded that they did not know. The rest responded with the incorrect answers.

Attitude

Table-2 Attitude of respondents towards kala-azar

Attitude of respondents towards VL	Respondent N=512 (%)	VL past history N=223(%)
Types of advise provided		
Buying drug from store	3(0.6)	2(0.4)
Consulting medical doctor	489(95.5)	218(42.6)
Consulting traditional healer	20(3.9)	3(0.6)
Reporting after getting disease		
Hospital	359(70)	216(42.1)
Traditional medicine	35(6.8)	3(0.6)
Private clinic	118(23)	4(0.8)
Advising VL patients for drug		
Yes	496(97)	220(43)
No	16(3)	3(0.4)

When members of households were asked, "if some one in your family or a neighbor suffers from VL what kinds of advice will you seek, "most (95.5%) responded, they would consult a medical doctor. Very few responded they would "consult a traditional healer" and "buy medicine from a medical store". Though many households said they would consult a medical doctor, they also practiced traditional methods of treatment and reported to hospital at later stages of their disease.

Their attitude after getting the disease was also assessed. More (70.1%) responded "to report to the hospital after getting the disease" than "to the private clinic (23.0%)" and traditional medicine (6.8%).

Practices

Table-3: Practices of respondents toward VL

Practices of respondents	Respondent N=512 (%)	VL Past history N=223
Use of net during monsoon		
All of us	51(10)	20(3.9)
Some of us	57(11)	27(5.3)
None of us	404(79)	176(43.4)
Reasons for not using mosquito net during pre-monsoon		
Did not have net	316(61.7)	144(28.1)
No risk of disease	102(19.9)	43(8.4)
Did not know	94(18.3)	36(7.0)
Reasons for not using mosquito net during monsoon		
Did not have mosquito net	316(61.7)	144(28.1)
No risk of disease	21(4.1)	15(2.9)
Did not know	175(34.2)	64(12.5)
Reasons for not using mosquito net during post monsoon		
Did not have mosquito net	316(61.7)	144(28.1)
No risk of disease	178(34.8)	73(14.3)
Did not know	18(3.5)	6(1.2)
Net wants know (felt need)		
Yes	428(84)	193(37.7)
No	84(16)	30(5.9)
How to fund it		
Saving	17(3)	9(1.8)
From purchases project	411(80)	185(36)
Did not know	84(16)	29(5.7)

No significant differences in the proportional morbidity of past disease were found among all mosquito nets practicing groups. A higher number of past history and current disease positives was found among the non-mosquito net using group.

The reasons for not using mosquito net were listed as: did not have mosquito nets, too hot to use mosquito net, no risk of disease and did not know. A majority (62%) of the households did not have mosquito net. Those with mosquito nets were not using them properly. Households with mosquito nets had different reasons for using/ not using mosquito nets during pre-monsoon, monsoon, and post monsoon. During pre-monsoon and post monsoon the majority of the mosquito net holders felt that there was no risk of disease. But during monsoon, most of the mosquito net holders used the mosquito net, without knowing its proper use. Past studies on kala-azar vectors have shown distribution of sandflies all the year round in varying densities. The different aspects of the disease were discussed with villagers by the surveillance team. Villagers were made aware of the proper use of the mosquito nets and its importance. After being educated, a majority (83.6%) felt the need of a mosquito net. However, 16.4% answered they still did not feel any need. The households were asked about their funding resources for purchasing mosquito nets. The majority (80%) of them responded that they would buy nets in future and 3.3% responded they would buy them from their savings soon. However, 16.4% had no idea about it. The distribution of the disease has no relation with the prevention strategy sought by the respondents.

Discussion

Disease control programs in developing countries are often unsuccessful or unsuitable because the strategies pursued are inappropriate for the community or incompatible with traditional perceptions of aetiology, transmission, treatment and prevention⁶. The present study showed that despite some knowledge of the kala-azar disease, the residents were still being infected, as evidenced by the number of active cases detected in this study during examinations. A high proportion of households had previous knowledge of the disease and all positive households during the examinations responded with knowledge of the disease. All active VL positive households (5.8%) in the initial (2.6%)

and follow up (3.3%) examinations responded that they knew about the disease. Knowledgeable household members were found positive during the subsequent examination period. This suggests that having knowledge is not enough in some cases to prevent the disease.

A majority of respondents did not know about any of the risk factors for the disease, transmission mechanism of disease, benefits of protective devices etc. Positive past history households and current positives had no knowledge of VL. Majority claimed that they knew the disease but were not aware about the signs and symptoms and risk factors. They were only familiar with the name of the disease but not with the possible risk factors. The disease was equally distributed among all respondents.

Respondents were asked to list the protective measures for VL control. The respondents using various protective devices had past history of VL and were presently detected positive for the disease. This suggests that knowledge of protective measure does not necessarily correspond with preventive practices. Respondents were evaluated for knowledge regarding the benefits of using mosquito nets. Observations and analyzed information showed that the subjects did not know that mosquito nets could also be used for protection against sandfly biting. They believed that the net could only be used to prevent mosquito bites.

The respondents in this study widely believed that the disease was supposed to be transmitted by mosquito since most of them did not know about the vector sandflies. Only the respondents were known about the mosquito bite.

Therefore, it is very necessary that the people in the endemic areas need to be made well known or informed about the use of preventive measures against the vector borne diseases for the successful control of the disease like malaria, kala-azar, lymphatic filariasis etc^{7,8}.

Acknowledgement

Authors are thankful to Special Program for Research and Training in Tropical diseases (WHO/TDR) for the financial support. We would also like to extend our deep memory to the villagers of the study area who have also contributed significantly to this study.

Reference

1. Molyneux, D.H., Ashford, R.W. *The Biology of Trypanozoma and Leishmania, Parasites of Man and Domestic Animals*. New York: International Publications Service Taylor & Francis Inc. 1983.
2. World Health Organization (WHO), *Report of the Second WHO Meeting on Emerging Infectious Diseases*. Document WHO/CDS/BVL/95.2. Geneva, Switzerland: World Health Organization. 1995.
3. Ministry of Health/Epidemiology and Disease Control Division, Annual report, 1998: 38-46.
4. World Health Organization (WHO), *Control of the Leishmaniasis: Report of a WHO Expert Committee*. Technical Report Series 793. Geneva, Switzerland: World Health Organization, 1990.
5. Koirala S, Parija SC, Karki P, Das ML. *Knowledge, attitude and practices about kala-azar and its sandfly vector in rural communities of Nepal*, Bulletin of the World Health Organization, 1998; 76 (5): 485-490.
6. Ahorlu C. K., Samuel K. Dunyo, Kwadwo A. Koram, Francis K. Nkrumah, Jens Aagaard-Hansen, Paul E. Simonsen. *Lymphatic filariasis related perceptions and practices on the coast of Ghana: implications for prevention and control*, Acta Tropica 1999; 73: 251-264.
7. Agyepong IA, *Malaria: ethnomedical perceptions and practice in an Adengbe farming community and implications for control*. Social sciences and medicine, 1992;35:131-137.
8. Yeneneh H *et al*. *Antimalarial drug utilization by women in Ethiopia: a knowledge-attitude-practice study*. Bulletin of the World Health Organization, 1993;71:763-772.