

Original Research Article

Perceptions about malaria among the Bedia tribal people in Uttar-Dinajpur district of West Bengal, India

Uttam Kumar Paul^{1*}, Pramukh Bhattacharyya², Rituparna Bhattacharyya²,
Arup Bandyopadhyay³

¹Department of Medicine, MGM Medical College, Kishanganj, Bihar, India

²Department of Microbiology, MGM Medical College, Kishanganj, Bihar, India

³Department of Physiology, MGM Medical College, Kishanganj, Bihar, India

Received: 25 March 2017

Revised: 18 June 2017

Accepted: 20 June 2017

*Correspondence:

Dr. Uttam Kumar Paul,

E-mail: druttam131065@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: In a tropical country like India, malaria is a major vector borne disease ranging from highly urbanised to deep rural areas. Though lots of health activities are going on against it in urban areas it is difficult to penetrate the deep rural areas particularly the tribal based interior villages because of lack of initiative, huge illiteracy, gross poverty and language problems. Therefore, a study was ventured in a rural community in North Dinajpur district of West Bengal, India occupied by members of scheduled tribe called 'Bedia' whose mother tongue is a tribal language called 'Nagori'- to understand their knowledge and perceptions about malaria so that future actions can be taken to uplift their health status and awareness particularly in relation to malaria.

Methods: Present study have conducted three focus group discussions (FGDs), one with male participants, one with females and the third one involving both the sexes. There were 9-11 participants per FGD and total of 28 participants were included in the study.

Results: The transcripts were at first coded and then categories were framed. Total six categories, which are: perceived causes of malaria, perceived features of malaria, mode of spread, treatment, difficulties and modes of prevention. After the content analysis of the transcripts conclusion was drawn.

Conclusions: Through our field work and the focus group discussions on the Bedia tribes we understood several misconceptions and lack of awareness of the tribal community about malaria. However, it was possible to create awareness and confidence among them that they could take all preventive measures and positive approaches towards malaria.

Keywords: Bedia tribes, Focussed group discussion, Malaria, Qualitative research

INTRODUCTION

Malaria is a very common but dreadful malady in all tropical countries including India. It is a mosquito borne infectious disease caused by the protozoan parasite belonging the Plasmodium group.¹ The symptoms of malaria include fever usually with chill and rigor, severe

headache fatigue and in severe cases acholuric jaundice, seizures, coma and even death.

The distinct species of malaria parasite are: *Plasmodium vivax*, *Plasmodium falciparum*, *Plasmodium ovale* *Plasmodium malarie*, *Plasmodium knowlesi* of which plasmodium falciparum is the most fearsome and is often lead to the fatal conditions. The disease is widespread in

the tropical and subtropical regions that exist in a broadband around the equator.² This includes much of the sub-saharan Africa, Asia and Latin America. In 2015 there were some 14 million cases of malaria worldwide resulting in an estimated 4,38,000 deaths, 90% of which occurred in Africa.³ Rates of this disease decreased from 2000 to 2014 by 37%, but it resurged in 2014 again during which period there were 198 million cases of malaria globally. Malaria is commonly associated with poverty and has a major negative effect on economic development.⁴ In Africa, there is a total annual loss of US dollars 12 billion due to loss of man work hour, cost of treatment and loss of tourism income- all due to malaria.⁵

Malaria has several serious complications mostly related to falciparum malaria. Renal failure is a feature of blackwater fever when black urine is excreted due to laking of lysed haemoglobin in the urine. Severe respiratory distress is very common in 25% of adults and 40% of children in falciparum malaria. The common causes of these are: metabolic acidosis, noncardiogenic pulmonary edema, concomitant pneumonia and severe anaemia. Although rare in young children but acute respiratory distress syndrome (ARDS) occurs in 5 to 25% of adults and 29% of pregnant women.⁶ Encephalopathy is a common feature of falciparum malaria. Hepatosplenomegaly is common, less common but not infrequent are spontaneous bleeding, coagulopathy and shock. Malaria is a worthy cause of abortion, stillbirth, low birth weight and infant mortality.

Recurrence is a very consequence of malaria even after varying symptom free periods. Depending upon the cause, recurrence can be recrudescence, relapse or reinfection. It is principally caused by parasites surviving in the blood because of inadequate treatment. Because of its high mortality and morbidity malaria has placed the greatest selective pressure to human genome causing resistance. Several genetic factors creating the resistance against malaria include absence of Duffy positive blood group, sickle cell trait, thalassaemia traits and glucose 6 phosphate dehydrogenase deficiency. Vigorous attempts are being made to eradicate malaria, like "malaria no more" programme mostly in Africa. Clinical trials for development of malaria vaccine, global fund to fight malaria (which has distributed 230 million insecticide treated mosquito nets), Clinton foundation in USA, malaria atlas project and malaria policy advisory committee (MPAC) of the WHO.⁷ Bill Gates has also expressed his concerns and believes malaria eradication from the world is possible by 2040.⁸ In current study, we have ventured to do a qualitative research on malaria perceptions through several focused group discussion (FGD) among the resident of a Bedia tribal village. This tribal community is now found mainly in Bihar, Jharkhand and West Bengal. They have several other names but the ones under our study are 'Bedia kudmi'. They speak in 'Kudmali' an Indo Aryan language, at home but because they use Devanagari script, the language is colloquially more commonly known as

"Nagori". In present days, most of the Bedias can speak in Bengali also except the old ones.

METHODS

This qualitative study was conducted at the village Mahatopara, Tungidighi, Uttar-Dinajpur district, West Bengal, India. Total three focus group discussions (FGDs) which was a descriptive type of qualitative research were conducted. We arranged focus group discussions one with male participants one with females and the third one involving both the sexes. There were 9-11 participants per FGD. All the 28 participants were selected by purposive sampling using the following inclusion criteria.

Inclusion criteria

Age: 18-65 years, Willingness to participate, Ability to contribute and share views.

Data collection

The first author trained in "qualitative methods in health research " conducted the FGD assisted by the second and third author under the supervision of the fourth author who is also trained in "qualitative methods in health research ". FGD with the females were initiated by the second author who is also a female. Proper consent was taken beforehand. The venue was selected at their own comfortable village places with prior discussion with the participants. Each FGD lasted for 45-60 minutes. Culture sensitive light food were served after each FGD to all the participants. The summary of discussion was shared with the participants after each FGD session.

Data analysis

Most part of the FGDs were in Bengali. Very little part was in Nagori language which were translated into Bengali by one of the members of the Bedia tribes who is a teacher by profession. All the authors knew Bengali and English language. The second and the third author carried out the transcription of FGDs from Bengali to English. Transcripts were typed in the English language after listening the audio recordings carefully and referring to the field notes.

The descriptive content analysis was done manually by the first and fourth author reviewed by other two authors. Descriptive coding of the transcript was done. Similar codes were merged together to form categories. This study was approved by the ethical committee of MGM Medical College, Kishanganj, Pin: 855107, India.

RESULTS

Among the 28 participants 22 were female and 6 were male. Of these 22 female participants 8 were in the age group of below 30 years, 6 were in the age group of 31-

40 years, 4 were in the age group of 41-50 years, 3 were in the age group of 51-60 years and 1 was above 60 years. Of the total 6 male participants 3 were below 30 age group, 2 were in the 31-40 years age group and 1 was in the 51-60 years age group. Level of education of the participants: six female participants were illiterate, eleven of them had primary level of education, four had

secondary level of education and one of them had higher secondary level of education.

One male participant was illiterate, three had primary level education, one had secondary level of education and one had higher secondary level of education.

Table 1: Results of qualitative analysis.

Categories	Codes	Statements
Perceived causes of malaria	Air borne	Malaria occurs in the people because of polluted air, sometimes polluted air causes malaria among the community people.
	Water borne	Drinking polluted water is the cause of malaria among tribal population, lack of water may lead to bad health and malaria among the people.
	Bad person /other causes	The disease occurs because of evil watching of bad person, come in touch with the bad person causes malaria, many times disease malaria is caused by the ghosts.
	Insect bites	Bite of small insects is the cause of the disease, the disease occurs due to mosquito bites, bite of mosquitoes originated from polluted water causes malaria, bite by the generous size mosquitoes causes malaria.
Perceived features of malaria	Fever	There is presence of high fever, there may be fever with chill, patient become unconscious with fever, there may be headache and fever in a patient.
	Gastro intestinal symptoms	There is decreased appetite, nausea and vomiting, swelling of abdomen in a malaria patient, the malaria patient may have pale and yellow body.
	Other symptoms	The patients of malaria may have convulsions, they may have cough, there may be pain in the eyes, there may be loss of weight in malaria patients.
Modes of spread	Body contact	Sharing bed with malaria patients may cause the disease, close touch with patients may cause malaria.
	Through blood	If blood of malaria patients is touched by person he may get the disease, sharing major blades may cause malaria.
	Mosquito bite	Bite by large mosquito is the cause of malaria.
Treatment	Sanctified water	Drinking of sanctified water offered by holy person of Bedia cure malaria.
	Herbal medicine	Herbal medicines given by ojha causes relief from malaria.
	Jhar-fuk	Reading of 'mantra' by Bedia 'priest' causes relief of malaria.
	Allopathic system	Going to hospital and treatment by doctor's cures malaria.
Difficulties	Money	Lack of money for transport of patients, for buying medicine for malaria patients, to bear laboratory expenses for malaria patients causing problems for the family members of the malaria patients.
	Education	Lack of proper knowledge about malaria is a problem regarding treatment of malaria, low level of education and language barrier-lead to communication problem during treatment of the disease.
	Document	Lack of treatment records of the patient is one of the problem during treatment of malaria, scarcity of documents hamper treatment.
Modes of prevention	Cleanliness	Cleaning of surrounding areas of the house decreases mosquitoes and insects and reduce malaria diseases. Supply of sufficient clear water prevents the disease.
	Insecticide spray	Insecticide like DDT spray destroys mosquitoes and insects and the chances for disease decrease in the community.
	Mosquito net	Use of mosquito net by the villagers during sleep prevent mosquitoes and insect's bites-decrease the malaria disease.

DISCUSSION

In the present study from the transcript of the three focus group discussions performed a total of 6 categories could be found out, viz., causes of malaria, features, modes of

spread, treatment, difficulties and modes of prevention-all as perceived by the Bedia tribal villagers.

Each category was divided into 3 to 4 codes which are given in the 'results' section of the article in a tabular

form. The different statement made by the Bedia tribal people corresponding to the various codes are also mentioned.

Regarding causes of malaria their perceptions range from bad air, polluted water to even lack of water (which is common in many villages throughout the country). The other significant perceptions of these villagers as to the cause of malaria include jealous desires for the disease imposed by an enemy turned neighbor and influences of ghosts. The concept of insect bite, or mosquito bite for that matter, is also included in their thoughts and they conceive the idea that only large mosquito bite leads to malaria.

The clinical features of malaria as conceived by the villagers include high fever with chills, headache and unconsciousness. These nicely conform to scientific thoughts as they reflect what they feel and see, like other features including loss of appetite, nausea, vomiting, abdominal distention, eye-ache, weight loss, cough, pallor and even yellowness of the body were also noticed by these illiterate tribal people.

Although it is not an expected that they wrongly think about the modes of spread of malaria to be bed sharing, close touch but surprisingly quite a few of them also know that malaria is a mosquito borne disease.

Similarly, regarding treatment many of them still believe that 'jhar-phuk' (a kind of occult ritual) by the expert priest of the community is the treatment of choice in malaria just as sanctified water and herbal drugs. But many of them have started to understand the importance of attending qualified doctor and treatment centres.

The major difficulties in combating the disease as faced by the tribals are-lack of money to arrange transport of the patient, visiting the doctors, performing the laboratory test and purchasing medicines. The dearth of records and documents were also noted. Illiteracy, language barrier and communication problems were worth mentioning.

Regarding prevention of malaria their thoughts included environmental cleanliness, spread of insecticides (particularly DDT is well known to them) and use of mosquito nets. It was really an enlightening to find out that even in the remote villages inhabited by tribal people right concept have largely crept in, although some residual superstitions and wrong beliefs still do persist.

Malaria was once a global health problem but after the path-breaking discovery of Sir Ronald Ross regarding the role of mosquito as a vector, the detection of the exact causative organism and his lucid description of the life cycle-preventive measures started to creep in.⁹ Malaria has been successfully eliminated from the United States and most European countries through vector control programs in conjunction with early detection, monitoring and treatment of the infected humans. However, in most

parts of Asia and Africa this eradication has still been elusive.

Sir Ross received Nobel Prize in 1902 and 115 years have elapsed till his revelation on facts on malaria and yet malaria is progressing in devastating forms in these two continents. Therefore, the knowledge, truth and social reality must have discovered pertaining to these developing continents and a qualitative research needs to be instituted.¹⁰ Surprisingly though malaria is a huge social and economic burden in India, no qualitative research study has been done here so far. The problems as revealed by our study in the community is a deep-seated chain of superstitions still prevailing in the 21st century. A radical approach is needed now to address the situations for true eradication of malaria.

CONCLUSION

Through our field work and the focus group discussions on the Bedia tribal people we understood several misconceptions and lack of awareness of the tribal community about malaria. However, it was possible to create awareness and confidence among them that they could take all preventive measures and positive approaches at least in the small scale towards malaria. Further and more vigorous measures are needed with warfront like efforts for global and total eradication of malaria. Socioeconomic measures including qualitative researches could be a useful tool.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Malaria Fact Sheet N°94". WHO. March 2014. Archived from the original on 3 September 2014. Retrieved 28 August 2014.
2. Caraballo H, King K. Emergency department management of mosquito borne illness: malaria, dengue and West Nile virus. *Emer Med Practice.* 2014;16(5):1-23.
3. Jump u WHO (2014). World Malaria Report 2014. Geneva, Switzerland: World Health Organization. pp. 32-42. ISBN 978-92-4-156483-0
4. Worrall E, Basu S, Hanson K. Is malaria a disease of poverty? A review of the literature. *Trop Health Med.* 2005;10(10):1047-59.
5. Greenwood BM, Bojang K, Whitty CJ, Target GA. Malaria. *Lancet.* 2005;365(9469):1487-98.
6. Taylor WR, Hanson J, Turner GD, White NJ, Dondrop AM. Respiratory manifestations of malaria. *Chest.* 2012;142(2):492-505.
7. Hartman TK, Rogerson SJ, Fisher PR. The impact of maternal malaria on new-borns. *Ann Tropical Paedia.* 2010;30(4):271-82.

8. Hedrick PW. Population genetics of malaria resistance in humans. *Heredity*. 2011;107(4):283-304.
9. Cox F. History of human parasitology. *Clin Microbiol Rev*. 2002;15(4):595-612.
10. Nakkeeran N. Knowledge, truth and social reality: an introductory note on qualitative research. *Indian J Community Med*. 2010;35(3):379-81.

Cite this article as: Paul UK, Bhattacharyya P, Bhattacharyya R, Bandyopadhyay A. Perceptions about malaria among the Bedia tribal people in Uttar-Dinajpur district of West Bengal, India. *Int J Res Med Sci* 2017;5:3488-92.