

Black Fever among the Ethnic Santal People in Bangladesh

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Abstract The study tries to find out the scenario of black fever among the Santal people in Bangladesh. Santal patient health seeking behaviors related with their community people decision, free treatment consideration, preferable healthcare option. Those the entire thing is related with culture. The study is explorative and to some extent descriptive in nature that enforces to adopt mixed with qualitative and quantitative data as well as secondary and primary data. Research shows that 81% patient depend too much on treatment of indigenous physician (Kabiraj). Also barriers of accessing health care are the prevailing factor for health seeking behavior. 92% respondents said awareness and knowledge regarding black fever has too much impact. 43% people are influenced by church and Non-Governmental Organization (N.G.O) during decision making regarding treatment. 54% patients state that, skin turns into more black after taking medicine. Economic condition of lower class people has too much impact on health seeking behavior also. Santal people traditional practice is responsible attacked by black fever. If we will able to conscious ethnic people, dying and suffering regarding black fever will dissolve.

Keywords: Health Seeking Behavior (HSB), Black fever, ethnic, Santal people, treatment

Cite This Article: Md. Yeamin Ali, Md. Fakrul Islam, Md. Redwanur Rahman, kazi Robiul Alom, Md. Liton Hossen, Atiqur Rahman, Mahfuza Khanom Sheema, Jesmin Akhtar, Akib Javed, and Mst. Rupali Akhtar, "Black Fever among the Ethnic Santal People in Bangladesh." *American Journal of Public Health Research*, vol. 4, no. 2 (2016): 62-68. doi: 10.12691/ajphr-4-2-4.

1. Introduction

Black fever or kala-azar or leishmaniasis are caused by 20 species of *Leishmania* and transmitted by less than 35 species of female sandflies [1,2]. The syndromes of VL are fever, weight loss, splenomegaly, hepatomegaly, skin darkening and anemia [3]. Black fever of leishmaniasis is one of major tropical diseases research by World Health Organisation (WHO) [4,5]. *Visceral Leishmaniasis* (VL) and *Cutaneous Leishmaniasis* (CL) are two types of leishmaniasis diseases [6].

Worldwide 20,000 – 30,000 people die and 186 million people are at risk of VL [7]. Humans are considered as only source of infection for the sandflies vector [8]. 300,000 new VL occur annually; 90% of them occur in Bangladesh, Brazil, Ethiopia, India, Nepal, South Sudan and Sudan [9]. South Asia is the highest VL prone region in the world [10].

In Bangladesh, black fever re-emerged sporadically in 1970s. It increases from 3,978 in 1993 to 9,379 in 2006. Last few years, the incident declined significantly and was report only 1103 in 2013 [11]. VL reported cases are second highest in Bangladesh among Indian subcontinent

[12]. PKDL burden within Indian subcontinent is highest in Bangladesh [13].

In northern Bangladesh, it has been highly prevalent among the ethnic minorities. According to a local newspaper, in 2004, 500 persons of 115 ethnic families of three Santal villages affected by black fever [14]. To know, why this diseases sporadically prevailed among the plain land Santal indigenous people. It is also important to know the health seeking behavior of black fever patient.

Black fever patient health seeking behaviors influence by their belief, socio-culture condition, economic condition and traditional practice of people. Those the entire thing related with culture practice.

The distribution and incident rates are high among the poor section, literature search reveals. Chelala (2004) reported that it as 'the poor man's disease' [15] that is perhaps the most neglected and lesser known among all the infectious diseases of South Asia which hits the poorest in the poorest regions of South Asia.

The causes of the illness as meaning and causation beliefs influence their choice of selecting specific health care option or treatment. In addition being an ethnic, they are far away from modern health care options due to various socio-cultural factors; even their health seeking decision is also influenced by those factors.

The study aims to understand the health seeking behavior of black fever patients. The purpose of the paper is to find out the preferable healthcare option, barrier of accessing healthcare option of black fever patient, to reveal the belief system regarding black fever treatment, to look for economic factors for health seeking behavior regarding black fever and to see the socio-culture factor for health seeking behavior of black fever.

2. Methodology

The study is explorative and to some extent descriptive in nature that enforces to adopt mixed with qualitative and quantitative data as well as secondary and primary data. The primary data were collected from a structured questionnaires, interviews, focus group discussion and observations. The secondary data were collected from different sources. The questionnaire survey was conducted based on sampling which include 100 respondents. The primary data were analyzed using various statistical software. Researcher used the purposive sampling. Because my research is related with black fever that's why Researcher selected black fever Patient as our respondent. Researcher also used snowball sampling for the research. Sometimes, researcher selected respondent by knowing another respondent. Who is attacked by black fever? So finally we used purposive sampling and snowball sampling for our research. In this study, researcher tried to understand indigenous Santal people health seeking behavior regarding black fever.

2.1. Study Area

Rajshahi district located in the north-west of Bangladesh. An estimated population of 2595197 people (BBS 2011) with total area of 96.69 km² (37.33 sq. miles) lying beside northern banks of the river Padma.

A quality treatment facility developed over decades in the city. Patients from surrounding district come to Rajshahi for quality health care service. But those indigenous people live in periphery did not get those facilities. Their health seeking behavior regarding illness is the barrier of treatment.

We worked with black fever patient health seeking behavior among the indigenous people. Godagary Thana of Rajshahi district has been selected as study area due to high prevalence of black fever among the ethnic communities. A large number of black fever affected patient live in the Godagary Thana of Rajshahi district, an estimate number of black fever patient was 500 which was one of the highest black fever prevalence area in Bangladesh. That's why our research team selects Godagary as our study area.

Moist soil, caves, cervices in the mud-flood, coral stones used to construct parapet-wall etc. are responsible for sand fly breeding [16].

Our research team worked in the three village of Godagary in the Rajshahi distinct.

3. Result and Discussion

Bangladesh has 1.13% of ethnic people but Godagari has 3.4% ethnic people. [17]

Half of the Santal people are ignorance and illiterate. They don't know how to read and write. Only 11% people passed primary level. Most of the Santal people are day labor. Most of them work as an agricultural day labor. But, few of them work as city corporation worker as a scavenger. Most of people have income between 40\$ to 50\$ per month.

Only 6% Santal people of the study area have three room houses. 30% people have double room house. Rest of them lived in a single room house. Every one in three people doesn't have sanitary latrine. But, almost everyone use tube-well water.

Among their practice, household pattern is significant. They live in a house which has no window and always kept dark. Their belief prevents them to make windows in their house. They kept their entire belongings inside their room. Even their domestic animals are kept inside of their house. So, sandflies have a perfect place for breeding.

They even don't clean their house. That's why, unhealthy and unclean house attract sandflies.

In Rajshahi district, in between 1994 to 2004, total 1300 black fever patient reported. But, only in 2004, in three indigenous Santal villages of Rajshahi reported around 500 black fever patients [14].

Leishmania species are responsible for black fever. The agent or pathogen lives extracellularly. Sand flies are the main host or vectors. The ideal temperature for the agent of *Leishmania* to grow is 22 to 26°C [18].

The parasite sized 1-3 μm stays in human tissue in its amastigote form and later grows in multitudes in macrophages by binary fission. Later, infected cells burst out and the parasites are engulfed by other macrophages. When, a female sandflies bites an infected patients, the amastigotes enter the gut of the sandfly, it develop into promastigote forms. These multiply by binary fission in the gut of sandfly. When the infected sandfly bites a man or any mammalian host, the parasite enters into the skin. This is how its life cycle completes [19].

3.1. Preferable Healthcare Option for Ethnic People

3.1.1. Belief on Indigenous Physician

They indigenous people like to go indigenous physician (*Kabiraj*) regarding treatment. That's became a part of their cultural practice. Nature is important thing for them. Indigenous physician collects all the material from the nature. The treatment and medicine is available, low cost and easy to get. Some of our respondents said that, they became cured by indigenous physician and that's why they belief them.

3.1.2. Do Not Understand the Disease and Take Treatment from Indigenous Physician

Most people cannot able to recognize black fever. They thing it is normal fever. So, they take medicine form indigenous physician.

3.1.3. Peer Pressure

Some of the respondent said that when someone is attacked by black fever then he became so upset. He did not able to think what he will do. Then he took medicine from indigenous physician because everyone else taking

treatment from them. We accustom to take medicine from them since childhood.

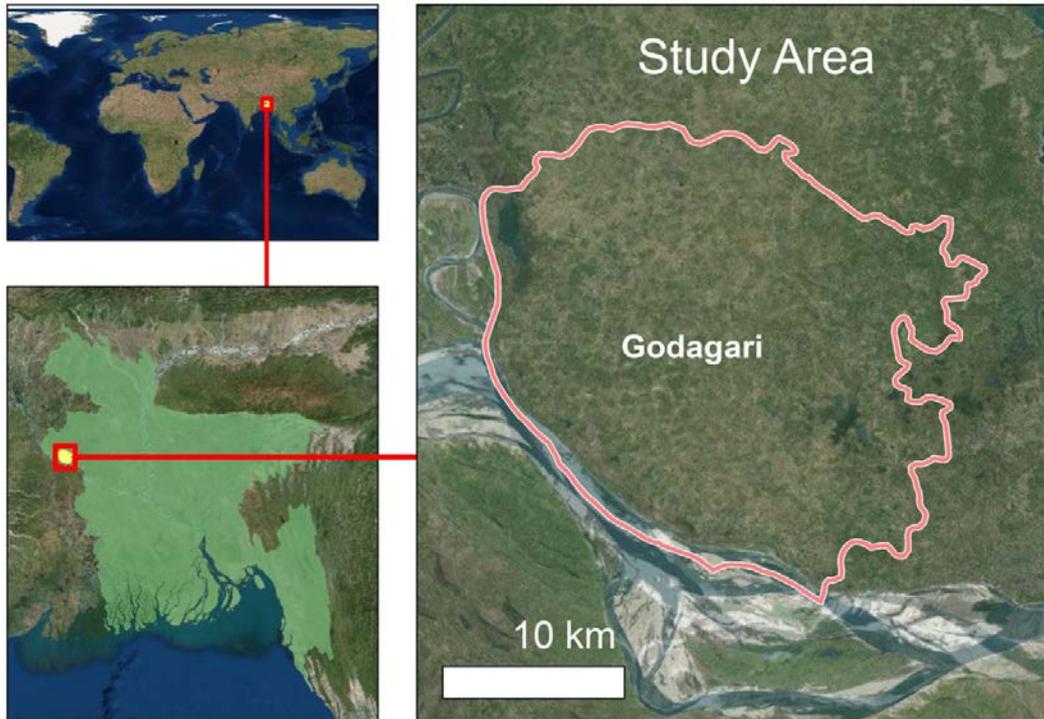


Figure 1. Map of study area of Godagari thana in Rajshahi district of Bangladesh

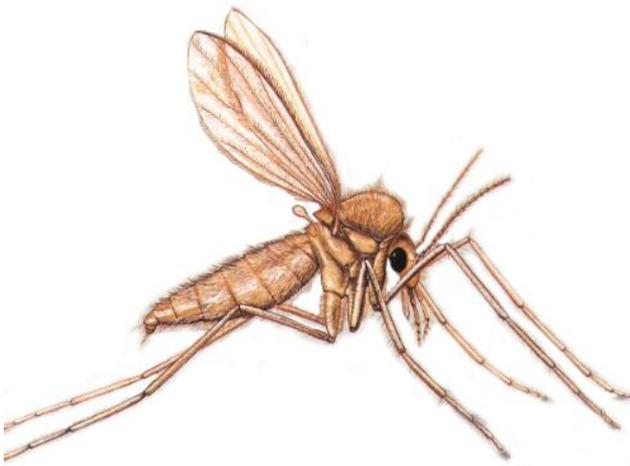


Figure 2. Leishmania species mosquito, vector of black fever disease in Bangladesh

3.1.4. Worship of Nature, No Faith in Modern Medicine

Indigenous people believe in nature. They start worship nature since childhood. Tree is one of the most important things in the nature. That's why they took treatment from indigenous physician. Some of the respondent said that, they did not have any faith on modern medicine. So, they took medicine from indigenous physician. One respondent claim that, he went to medical hospital to get cure from black fever. But, situation didn't improve. He came back village and took medicine from indigenous physician. By taking his medicine his spleen came back to normal shape and he became cure.

3.1.5. Cost of Medicine

Some of the respondent said that, both treatment and medicine is available from indigenous physician with low

cost. Poor people don't have enough money to go to the city and afford medical treatment. It is so difficult for them. That's why they take treatment from indigenous physician.

3.1.6. Indigenous Physician Is Their Community Member

Some of the Respondent said that, they believe on their neighbor and community people. Indigenous physician is their community member. That's why they take medicine from them. One of the respondent said, once he has black fever but was unable to recognize it. Later, an indigenous physician notice some symptoms and inform me that I got black fever. He also noticed that I'm fond of eating fried rice (chal vaza) and sleeping in the evening. He informs me that these are the sign of black fever. He also provides me medicine without cost.

3.2. Treatment from the Quack

People take treatment from the quack. Those who have relation with market when they attacked by black fever then they buy some medicine from quack.

3.2.1. Relation with Quack

Some of the respondent said that they took modern medicine from the quack. One of the person who attacked by black fever but he did not understand that he attacked by black fever. That time he works in the city corporation in drain construction work. He gossip with other Bengali people and he said that he is felling headache and fever. The Bengali people said that take Napa (Paracetamol) from a pharmaceutical store. That's why he takes medicine and start eating. Some of them taken treatment from the quack that they did not found any option that time they thing life is available that why they take from quack.

3.3. Both Indigenous Physician and Pharmaceutical Treatment

Some of respondent said that I felt so bad and so weak when I attacked by black fever. But I didn't understand it, first he took indigenous medicine from the Indigenous physician and he felt so week that why he took vitamin from a pharmaceutical center. But he did not cure. Later, they became so weak, that's why he admitted to medical hospital.

3.4. Treatment from Shaman (Traditional faith healer)

Indigenous people always take treatment from shaman too. They give them *pani pora* and amulet. Sometime they close any specific house or room by spell. They give different kind of treatment too.

Some of the respondents said that they take treatment from the shaman. Some of the respondents belief that

other used their bad power to kill them. That's why he calls the shaman in her house and provides him treatment. Shaman came her house and said that he is going to die. He needs to take treatment as soon as possible. Shaman said that you must started treatment from now. Then shaman told to quickly manage a glass of water with glass made of brass. Then he gives something in the glass. And you will drink that water through three days. Then shaman said that I will come three days later, the shaman told to manage old mustard, white hen and four soil pot and some of the Banana. Later, shaman comes, kill the hen and take blood in the pot. And spray through the house and he hang the soil pot in the four corners around the living room. And he pushes something in the middle of the each banana and told him to eat early in the morning daily. Some of the people said that they take shaman treatment because their other neighbor or other community person accustom to do so.

Table 1. Preferable healthcare option

Effect on Health Seeking Behavior [20]	Preferable Healthcare Option			
	Belief on Indigenous Physician Treatment	Treatment From the Quack	Both Indigenous Physician and Pharmaceutical Treatment	Treatment from Shaman
too much	81	33	90	23
much	15	32	6	45
a little	4	24	2	28
very little	0	8	2	2
no comment	0	3	0	2

Table 1 shows, 81% of the respondents prefer to visit indigenous physician to cure from black fever. Some people also visit Quack and Shaman. 90% people prefer both indigenous physician and general medical treatment.

3.5. Life is Valuable and Tries all the Option

When people attacked by black fever they gradually tried all the option of health care. They take treatment from quack, Indigenous physician, medical center and shaman.

Zakaria Hamrom lives the Rajshahi District. Age 32 and he is working in International Centre for Diarrhoeal Disease Research (icddr,b) as a field assistant. His nephew died by black fever. At the first time they did not understand that he is attacked by black fever. They thing it is normal fever. That's why they normal medicine from quack. Later his nephew become weaker and they admit him in the hospital. In hospital doctor push one injection per day. Doctor push 20 injection and sent them home after one month. But his nephew didn't cure. That's why they take treatment from indigenous physician and take amulet from shaman. But his nephew didn't cure and died.

3.6. Logic for Different Treatment and Different Treatment in The Same Time

In our study area we found indigenous physician Treatment, Quack treatment and treatment from shaman and treatment from medical Central. Sometime they take different treatment in a signal time. Some of them try all available option they have. Some of the people at first time they take medicine from quack and they thought it is the normal fever. But when it did not cure then they take medicine from indigenous physician. And some of them of the first time take medicine from indigenous physician.

And when they became weak may take vitamin from quack to improve their body. They take medicine from indigenous physician and quack medicine in a same time and when their condition became bad then they take treatment from medical center or admitted into hospital. We found some of the respondent who admitted in the medical center taking treatment from doctor and secretly they have taken treatment from indigenous physician.

Table 2. Different kind of treatment for black fever patient

Treatments	Numbers
treatment form only indigenous physician (kobiraj)	26
treatment form only quack	7
treatment form only shaman	10
treatment form only medical center	7
treatment form (indigenous physician and quack)	25
treatment form (indigenous physician, quack and medical center)	25

Table 2 shows that, among the Santal community, Kobiraj or indigenous physicians are popular and the give precedence in curing black fever.

26% people go to indigenous physician and 7% people go to quack for black fever treatment. There are 25% people depend on both Indigenous physician and quack too. Another 25% people rely on Indigenous physician, quake and medical center for treatment. Only, 7% go to medical center only.

3.7. Health Seeking Behavior Regarding Socio-Economic Context

3.7.1. Taking Treatment and Influence of Other

When they are taking decision for treatment they got influenced by various social character. Family member,

head of the village, father of church, even NGO person influence them in their decision making process.

Table 3. Treatment influenced by different sources

Type of Decision	Percentage (%)
influenced by church	26
combine decision	20
influenced by N.G.O	17
influence by indigenous physician (kobiraj)	13
influence by moral (head of the community)	10
influenced by family	7
own decision	7

Respondents said, influence of the church in the dominant regarding health seeking behavior. 26% people influenced by them (Table 3). 17% people influenced by N.G.O., 13% people influenced by Indigenous physician and 20% people influenced by several factors. Only 7% people claimed they're self-motivated.

3.7.2. Decision Influence by Chief of the Community

Some of the cases found where decision was influenced by chief. At first in their community, chief's child died by black fever. One respondent said that, I have found similar symptom and asked moral about it. Then the chief told him to go to the medical center. Chief suggested him to take treatment from indigenous physician too..

3.7.3. Decision Influence by Family Members

A ten years old girl had black fever. Who stays in his grandfather house. Her uncle and grandfather and other family member was anxious about it. They did not able to make a decision. Because many of the black fever attacked patient already died and some of them cure. Those who took treatment from indigenous physician, shaman and medical center. That why all of the family get together and make decision.

3.7.4. Decision Influenced by NGO

Some of the respondent said that they are influence by NGO. For example, when the entire villager attacked by black fever then it became an epidemic in their village. The time icddr, b and other NGO working in the village, and that time they told people what they have do. That's why they influence by NGO.

3.7.5. Decision Influence by Church and Combine Decision

Some of them said that they didn't know about the black fever. They just talking treatment form indigenous physician. But when church provide money and help. That' time church father give decision, where have to go and when get admitted in the hospital. One of respondent said that the taken decision by him. That's time many people died by black fever. Later, he thought that he has to leave the village because the village is going damage by God curse. That's why he pray to the disease God and admitted him in Rajshahi medical college with the help of his father-in-law. After some time later he became cure and didn't go back his village again.

3.8. Considering Thing When They Are Going to Take Treatment

If they indigenous people thing about treatment at the first time they think about economic condition they did not like to go any high qualified doctor because they are extensive for them. And sometime they did not able to take free medical treatment form sadar medical hospital. Because it is free from them but the transportation is costly.

3.8.1. Belief on Indigenous Physician and Doctor's DISCRIMINATION

The role of indigenous physician is important and villagers don't have enough faith on medical doctor. And the behavior of doctor is not good enough and doctor always neglects them and discrimination make to toward them.

Some of the doctor avoid them in admit to the hospital and they didn't able to get bed in the hospital. Indigenous people patient stay in the hospital floor. Doctor makes discrimination toward the indigenous people.

3.8.2. Harm of Disease and Benefit

One respondent told us, he had black fever earlier but he couldn't recognize it. So he take medicine from quake doctor and didn't go to medical college. High cost is another reason for not going to medical hospital. He also claims that, from medical center he's not getting enough attention and proper behave. Later, he admits to the hospital, because, this time he knew he got black fever.

Table 4. Pretreatment consideration

Effect on Health Seeking Behavior[20]	Pre-treatment consideration	
	Belief in Indigenous Physician and Doctor's Discrimination towards Santal People	Disease Severity and Rely on Treatment
too much	84	91
much	12	6
a little	2	1
very little	1	0
no comment	1	2

Table 4 shows that, 84% respondent's belief on indigenous physician has too much impact on health seeking behavior. 91% people said, seriousness of sickness and rely on treatment has strong effect on their health seeking behavior.

3.9. Social and Cultural Influence

Man live in society they always thing about society if only one people attacked by black fever they did not like to say about but when most of the people attacked by it then they shared about diseases. All the society people never take black fever as good. That thing always influences the health seeking behaviors of black fever.

In our research area we found some short of different. Some Man help to take treatment and some people make a distance to them.

One of the respondents had black fever. Her family member knew it that time when Many people died who attacked by black fever. And people make a distance from those family that why the family person provide treatment secretly.

Culture is that thing which always influences the people. In the santal cultural practice you did not found the practice of the modern treatment and they have little

knowledge about it. And they have little faith to it. The traditional religious practice has also impact on health seeking behavior of Santal people.

Table 5. Health seeking behavior influenced by socio-cultural factors

Impact on Health Seeking Behavior[20]	Socioeconomic factors		
	Social & Cultural	Religion	Economic
too much	75	44	88
much	15	17	5
a little	5	27	3
very little	3	9	2
no comment	2	3	2

Table 5 show that, social and cultural factors have 75% too much impact on health seeking behavior. 88% economic and 44% religious factors has also too much impact on health seeking behavior. 27% people consider religious factors have a little impact and 17% people belief have a little impact on health seeking behavior.

3.10. Economic Factor for Health Seeking Behavior regarding Black Fever

Economy is that thing which influences all the component of life. Economy is related with health seeking behaviors. Economy influences health seeking behavior. Economy has an influence in the health seeking behavior regarding black fever. When people think about healthcare or medical service, they first consider their economic condition.

Table 6. Economic class impact on treatment

Degree of Impact for Treatment[20]	Economic Class		
	Middle Class	Working Class	Lower Class
too much	50	90	95
Much	30	5	4
a little	10	3	1
very little	8	2	0
no comment	2	0	0

Table 6 shows, economic condition is highly correlated with degree of impact for treatment. It shows, 50% middle class people, 90% working class people and 95% lower

class people said that, their economic condition has too much impact on treatment. 30% middle class people said it has much impact and only 10% people said economic condition has a little impact on treatment procedure.

3.11. Barriers of Accessing Health Care

While thinking about treatment process, they consider some issue related to it. Such as, belief on doctor, expense distance, transportation and behavior of doctor.

3.11.1. Belief of Doctor and Behavior of Doctor

The indigenous people didn't belief on modern doctor and the doctor never makes a good behavior with them. That why they did not like to take modern Treatment.

For example, they like to go local hospital rather than to the Rajshahi medical hospital. Because, in the local Hospital, some of the Santal people work there.

The church has dominance toward local Hospital. The doctor of local Hospital Provide beds for the patient and make a good behavior toward them.

3.11.2. Distance and Transportation

Distance and transportation one of the other causes that make barriers for taking treatment. They didn't have any good transportation system toward hospital. When in 2004, villagers got black fever epidemically, that time, human pulled van and cow run vehicle (Gorurgari) was the only available transport. That why they didn't like to go hospital.

3.11.3. Lack of Awareness and Knowledge about Black Fever

Knowledge gap and lack of awareness are hampering the health seeking behavior on black fever patient. While around one third of the leprosy patient delayed to take proper treatment in Lusaka of Zambia, there we found that patients delayed on average six month in study area.[21] Similar picture found in our study area for black fever treatment.

Table 7. Barriers of accessing health care

Effect on Health Seeking Behavior[20]	Barriers of Accessing Health Care		
	Belief of Doctor and Behavior of Doctors	Distance and Transportation	Lack of Awareness and Knowledge about Black Fever
too much	75	81	92
much	14	16	4
a little	6	3	3
very little	2	0	1
no comment	3	0	0

Table 7 shows, 75% people opine that belief on Doctors and their behavior is a too much as a barrier to take medical treatment. Other hand, 92% people believe lack of knowledge and awareness is too much impact to not to take treatment.

3.12. Side Effects of TREATMENT

When a black fever patient using DDT to reduce sand flies, Multi-vaccine from any medical center. They face different kind of side effects. Many patients show no side effect too.

Table 8 . Post treatment side-effects

Problems	Percent (%)
reduce of eye sight	6
headache	10
skin turns into more black	54
allergic symptom	6
no problem	24

After taking medicine 24% patients faces no problem. But some time they face side effects. Like as, 54% patients says their skin turns into black, 10% having

headache, 6% having visioning problem and another 6% have some allergic problem.

4. Conclusion

Health seeking behaviors is not just an isolated event. It is result of traditional practice, social-cultural, economic, belief factor, transportation and other. The entire factor influences the health seeking behavior of black fever patient. Our Bangladeshi people is not well conscious and awareness about their disease it also influence health seeking behavior of black fever. Before identify disease they percept differently about their disease. The ethnic people depend on their cultural practice. The Santal people attacked by black fever for their cultural practice. Their food habit, household condition is the major cause for it. When they attack by black fever at first time they didn't understand. What kind of treatment they take it is depend on their cultural. They have strong belief on traditional practice. They did not like to go modern doctor. Because it is expensive and the doctor didn't make a good behave with them and they have strong belief on traditional medicine and black magic. Some time for distance and money they didn't able to get medical treatment. Their decision influence by community members, family members and church. We must think about how people take treatment when we are discussion for their health care. If we make conscious and try to teach people about different kind of disease, people of our society will able to make conscious decision about the diseases. So by the help of the proper health seeking behavior of black fever, we can cure black fever form our society.

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