

The Traditional Way in Preventing and Overcoming Health Problems

Ethnographic Study in Sulfur Miners in the Craters of Ijen

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Abstract— Banyuwangi is known as a sulphur producer in Indonesia. Sulphur mining activities in the crater of Ijen is a traditional activity passed from the older age groups to the younger ones, in the community around Ijen crater that has existed since 1968. Work as a sulphur miner is risky because the sulphur gas will later make breathing become congested. Risks that occur due to sulphur mining affect the onset of several diseases. This research is a qualitative research study. The research location was in Ijen crater in the village of Tamansari District of Licin, a Sub-district of Banyuwangi. The data obtained was from observations and interviews. The informants in this study were men aged 20-40 years. The working period was 10-20 years as a sulphur miner. The results of this research show that traditional herbal concoctions are used because the sulphur miners in Ijen crater live side by side with nature and still utilise nature as a means of prevention and treatment of diseases. The sulphur miners use traditional herbal medicine because it is still considered to be effective and practical compared to having to use modern medicine. Traditional herbal concoctions are also considered to be effective and practical because of the limited access to medical facilities due to the long distance that they have to travel to reach a hospital. This reinforces their use of traditional medications for curing and preventing diseases that they usually have from the cold weather and mining activities.

Keywords— *Traditional health prevention; jamu; sulfur miner; traditional medication*

I. INTRODUCTION

Banyuwangi is known as a sulphur producer in Indonesia. It is located in the crater of Ijen mountain, in Tamansari Village, in the Licin District. Sulphur mining activities in the crater of Ijen are a traditional activity passed from the older age groups to the younger ones, since 1968.

Mining activities in this area use simple traditional tools named “pikulan”, made of bamboo and woven shaped like a bucket to accommodate the sulphur obtained from the higher ground.

Work as a sulphur miner is risky because sulphur gas will later make breathing become difficult. The risks that occur due to sulphur mining will affect the onset of several diseases. Diseases resulting from sulphur mining activities are common

such as respiratory problems [1], tooth erosion [2], and also stress markers [3]. Long-term exposure to sulphate particles can cause respiratory diseases [4], [5] and even premature death.

How do sulphur miners deal with, and prevent, the diseases that they often encounter because of their activities as miners?

II. MATERIAL AND METHODS

This research was a qualitative research study. The research location was in Ijen crater, in the village of Tamansari, in the district of Licin which is a sub-district of Banyuwangi. Data was obtained from observations and interviews. The informants in this study were men aged 20-40 years. The working period was 10-20 years as a sulphur miner.

Aside from interviewing and observing, the researcher participated in the daily life of the miners, so that they felt comfortable and familiar with the researcher. This was meant to make the miners find it easier to say what they actually did in their daily life, in terms of preventing and curing common diseases. Some people felt uncomfortable to tell the truth, thinking that traditional medication is out of date and thinking that they are expected to be using modern medication.

During the mining activities, the researcher observed and accompanied each of them from the time that they go to the mining area until they returned home, especially to see the way that the miners provided protection for their bodies. Meanwhile, for activities outside the mine, the researchers followed the miners as they conducted pengajian, and went about the social activities of the village.

The interview was a meeting of two people to exchange information and ideas through questions and answers so that the meaning of a certain topic could be constructed [6]. Interviews are aimed to obtain information from an informant [7]. In-depth interviews will obtain comprehensive and useful data [8].

This research used two interview techniques -- structured and unstructured. In unstructured interviews, the researcher did not use systemically organised guidelines [9]. Then, the

data was categorised to facilitate a better understanding of the phenomena.

III. RESULTS AND DISCUSSION

The results of this research show that traditional herbal medication is used in their daily life, because they believe that the traditional herbs prevent them from catching various diseases that may infect them in the highlands. The ingredients can be found readily in their own garden.

Before doing their daily activities, the miners prepare a bitter coffee drinks, tobacco in the form of cigarettes, food, and also personal protective equipment. Usually the preparation is assisted by their respective wives. The equipment that usually accompanies them are boots, masks, gloves, bags to put the goods in while doing mining, and also a headlamp. In addition to the need to protect themselves, miners are also prepare supplies to replenish their power to remain strong at the time of transporting the sulphur loads.. According to Mr. Sul (49 yrs), and the other miners, bitter coffee (Fig. 1) and cigarettes are beneficial, to make them feel more awake and agile. They believe that those two clear up their lungs and throat from the sulphur that they breathe.



Fig. 1. Bitter coffee (Documented by Setiadji)

The distance that the miners climb to the top of the crater is not easy and it is slippery, due to the sandy area (Fig. 2). Usually they take a rest at the middle of the journey in a rounded hut. The round hut is a rest area that serves food for sale. The journey to the bottom of the crater is also difficult. The road is very narrow, and tourists also want to go there to see the blue fire, so that people have to take turns to pass on this small road.

Many of the miners maintain their health using traditional medication—or *jamu*. *Jamu* is the local name for general herbal drinks. These are made of a herbal mix that they can prepare by themselves. They also consume *jamu* that are sold in a store in their area. According to Mr. Sul (49 yrs) and Mr. Sok (49 yrs), they learned how to prepare the traditional medicine from their fathers. They said that in the past, the miners used horses too, to help them mine. The *jamu* they

made were for both humans and for the horses. The miner's wife usually helps in preparing *jamu*.



Fig. 2. Getting to the top, Ijen Crater (Documented by Setiadji)



Fig. 3. The miner transporting sulfur from the Crater (Documented by Setiadji)

The miners bring the sulphur on their shoulder (Fig. 3), and walk to the rounded hut, before continuing on with the journey. They have to have good stamina to do this for a living. They believe that traditional herbal medicines help them to maintain their health.

The traditional herbal medicines are:

1) "Konci" (*Boesenbergia pandurata*) herbal drink

"Konci" herbal drink is consumed everyday, in the morning, at noon and night after dinner. This is to prevent them from being too tired from mining.

How they make "Konci" (*Boesenbergia pandurata*) herbal drink (Fig. 4-8):

- They prepare betel leaves, coconut, palm sugar, and "konci"—choosing young plants, and washing the "konci" plants and betel leaf stalks, They pounded the "konci" plant and betel leaf, and squeezed them, and

cooked them together with shredded coconut and palm sugar. They waited until it had boiled for 30 minutes before they drank the *jamu*.



Fig. 4. Shredding coconut (Documented by Setiadji)



Fig. 5. *Boesenbergia pandurata*



Fig. 6. Pounding ingredients



Fig. 7. Squeezing the mixture together



Fig. 8. "Konci" herbal drink

** (Figure 5 to 7 were documented by Setiadji)

2) Traditional herbal drink mixed with *Jamu* "Cap Becak".

This is a Javanese herbal medicine that is usually drunk at night before they go to bed, during the colder seasons of the year.

- They prepared the drink by mixing Sprite, eggs, and factory-prepared *jamu* "Becak" Brand (Fig. 9).



Fig. 9. Traditional herbal drink mixed with *Jamu* "Cap Becak" (Documented by Setiadji)

3) "Dringu" (*Acorus calamus*) herbal drink (Fig. 10).

"Dringu" herbal drink is consumed during the rainy season, every day before they go to bed, after their bodies are massaged. During the rainy season, the miners are still able to do mining despite the rainy weather, without feeling cold. They believe that this drink has made them feel warm even when they walk out in the rain.

How they prepared it:

- They had the ingredients ready: sugar palm vinegar, the "Dringu" (*Acorus calamus*) plant, and garlic; they pounded the garlic and Dringu plants, put them into sugar palm vinegar and then waited until it was fermented, approximately for 2 weeks before they could drink it. They said that they may drink a maximum of a 1/4 of a glass.

4) Raw "konci" (*Boesenbergia pandurata*) herbal drink.

Raw "konci" is consumed once a week. This is believed to make them stronger and have more energy. The researcher found that those who consumed this raw "konci" herbal drink were the older miners, who have worked there for more than 10 years.

How they prepared the drink:

- They washed the “konci” plants, and betel leaf stalk, pounded them, and squeezed them to get the essence out to put into a glass. They mixed the essence with the egg, and stirred it well before they drank it.



Fig. 10. “Dringu” herbal drink (Documented by Setiadji)

Herbal drinks have been used by many cultures around the world to maintain health and to cure ailments, such as in Nigeria [10], Hongkong [11], even in the U.S. [12]. However, the use of herbal drinks is still a controversy [13].

For curing muscle pain (Fig. 11) and the common cold (Fig. 12), the miners use factory-made traditional herbs, that they can buy and mix with hot water. The brand is written in Chinese characters, and they do not know what those are made of, but they said that the factory-made traditional herbs cured their sickness.



Fig. 11. Factory made jamu for muscle pain (Documented by Setiadji)



Fig. 12. Factory made jamu for common cold (Documented by Setiadji)

IV. CONCLUSION

The sulphur miners in Ijen crater live side by side with nature and utilise herbs as a means of prevention and in the treatment of diseases. Furthermore, the sulphur miners use traditional herbal medicine because it is still considered to be effective and practical compared to having to use modern medication. Traditional herbal medication is considered effective and practical because of the limited access to medical facilities due to the long distance that they have to travel to reach a hospital. The limited access to modern health facilities reinforces the miners using traditional medications for curing and preventing diseases that they usually have from the cold weather and the mining activities.

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