



## Traditional Approach to Cure Shingles Using Medicinal Plants in Eastern Nepal

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### Abstract

Collection and documentation of indigenous knowledge of local people have an important role in scientific research, biodiversity conservation, and the drug development process. A study was carried out to document the medicinal plants that have been used by the local folk healer to treat Shingles in Ilam district, Eastern Nepal. A renowned folk healer who was involved in curing Shingles for decades and 30 key informants were selected for the interview to know the methods of curing Shingles. Altogether six plants viz: *Oroxylum indicum*, *Cynodon dactylon*, *Centella asiatica*, *Drymaria cordata*, *Sesamum indicum*, and *Lygodium japonicum* were found to be used against the disease. The traditional method of preparing medicine from these plants was found to be highly effective. The finding provides a clue for further extensive lab-based research to isolate the specific compounds that are effective against the disease.

**Keywords:** Ethnomedicine, *Varicella-zoster virus*, folk-healer, traditional medication.

### INTRODUCTION

Since the beginning of civilization, people have been dependent on the plant resources around them. They have been using plants and plant products as food, fodder, medicine, fiber, dyes, oils, etc. Through trials and failures, humans have learned several properties and uses of plants including medicinal values [1]. Medicinal plants have been used as a major source for the treatment of various diseases by human for thousands of years.

Our present knowledge on medicinal plants has developed from traditional medical practices, which has been passed down from generation to generation [2]. Plants have been used by peoples, specially the indigenous communities, throughout the world as a source of medicine and accepted as the complementary or alternative medicine due to their low side effects, cheap price, and high sustainability [3]. Such knowledge and ethnomedicinal information are culturally valued and scientifically very important [4].

The use of medicinal plants by traditional healers for the treatment of several diseases since a long time ago has been the basis for the discovery of modern medicine [5 - 9]. Also, promoting the traditional

practices regarding the medicinal plants and conservation of such knowledge are very important and contribute to the economy of the people [10 - 11]. The knowledge of medicinal plants is still taught orally and passed to successive generations without being written text and record [10, 12-13]. Therefore, priority should be given to documenting such knowledge properly from the folk healers and ethnic groups [14].

Nepalese traditional healers have been utilizing medicinal plants to cure varieties of disorders in human body like cuts and wounds, fevers, dermal infection, disorders of several organ systems, bites of reptiles and insects, and even in veterinary uses [15-19]. Generally, the traditional healers are reluctant to disclose detailed information on various diseases and plants used for the treatment, and therefore, most of the studies on ethnomedicine provide very limited information on that regard. Our study aims to focus on the medicinal plants used against one of the problematic diseases (Shingles) in a village of Ilam district, Eastern Nepal.

Shingles (Nepali name: Janai Khatira) is a viral disease, which affects elderly people and hence, it is considered to be associated with aging [20-21]. As a symptom, rashes occur in a stripe around either the left or the right side of the body that is compared with the sacred thread "Janai" which is worn by Hindu males. It mainly results from the reactivation of inactive Varicella-zoster Virus in the sensory dorsal root or cranial nerve ganglia and usually manifests as a painful vesicular rash along a dermatomal region [22].

This study documented the information regarding the practice of curing Shingles traditionally using local medicinal plants in the Talgaun village of Ilam district, Nepal. It is expected that this study may provide useful information on medicinal plants used to treat Shingles which was previously unknown. It would also be useful to know the perspective of local peoples towards the traditional healing system and the importance of local ethnomedicinal flora.

## **MATERIALS AND METHODS**

### **Study area**

The present study was carried out in the Ilam district which is a hilly district situated in Province No. 1, Eastern Nepal. It is located between latitudes 26°40'N - 27°08'N and longitudes 87°40'E -88°10'E with an area of 1703 sq. Km. The district stretches from the lower Tarai to the upper hilly belt of the Himalayan region with an elevation ranging from 140 m to 3636 m above sea level. The Sandakpur Rural Municipality lies in the eastern part of the district (Ward No. 3, Talgaun village) was the area of collecting primary information on medicinal plants used for Shingles (Fig 1).

### **Documentation of ethnobotanical information**

The information regarding the traditional knowledge for curing Shingles and the perspective of local people towards this tradition was obtained through the interview method [23] from June to July 2019. Semi-structured questionnaires were used to gather information on the medicinal plants with their local

names, habits, availability, parts used, and mode of preparation of medicine; also, the efficacy of the medicine.

A renowned folk healer was selected from Talgaun village of the Sandakpur Rural Municipality. The healer had been involving in curing Shingles since last 15 years ago and he had cured over 250 patients to date. He was known to cure the uncured hospital patients. A total of 30 people who were cured by the healer were identified and interviewed as the key informants. The plants used and method of preparing medicine were documented during the study. Prior Informed Consent (PIC) was taken from the healer and the key informants before documenting the knowledge.

### Collection and identification of medicinal plants

The medicinal plants which were used for treating Shingles were collected with the help of the folk-healer and key informants. Plants were mainly collected accordingly to the folk healer's information and identified in the field. Herbaria were prepared and deposited in the Department of Botany, Mechi Multiple Campus (Tribhuvan University), Bhadrapur, Nepal.

## RESULTS

### Medicinal plants used to cure Shingles

Altogether six plants viz: *Oroxylum indicum* (L.) Kurz. (Family - Bignoniaceae; Local name - Totala), *Cynodon dactylon* (L.) Pers. (Poaceae; Dubo), *Centella asiatica* (L.) Urb. (Apiaceae; Ghodtapre), *Drymaria cordata* (L.) Willd. ex Schult. (Caryophyllaceae; Abhijalo), *Sesamum indicum* L. (Pedaliaceae; Kaloteel) and *Lygodium japonicum* (Thunb.) Sw. (Lygodiaceae; Naagbeli) were used by the folk healer to cure Shingles (Table 1).

**Table 1: List of Medicinal plants used by the healer to cure Shingles**

S.N.	Scientific Name	Local Name	Parts Used
1	<i>Oroxylum indicum</i> (L.) Kurz	Totala	Stem an bark
2	<i>Cynodon dactylon</i> (L.) Pers.	Dubo	Young shoots
3	<i>Centella asiatica</i> (L.) Urb.	Ghodtapre	Leaves
4	<i>Drymaria cordata</i> (L.) Willd. ex Schult.	Abhijalo	Leafy shoot
5	<i>Sesamum indicum</i> L.	Kaloteel	Seeds
6	<i>Lygodium japonicum</i> (Thunb.) Sw.	Nagbeli	Young shoots

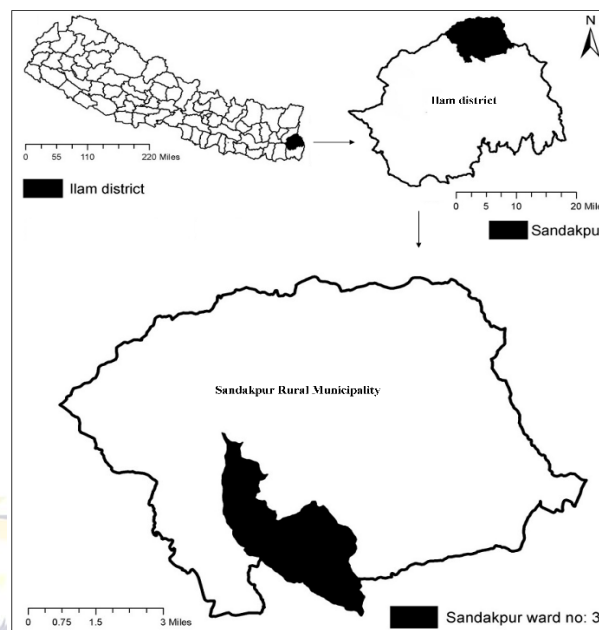


Fig 1: Study area showing Sandakpur Rural Municipality, Ward No 3, Ilam district, Nepal

## Preparation of medicinal extract

The folk healer used the bark of matured *O. indicum*, young shoots of *C. dactylon*, leaves of *C. asiatica*, leafy shoots of *D. cordata*, seeds of *S. indicum*, and young shoots of *L. japonicum* for the preparation of medicinal extract (Table 1).

For the preparation of the extract, all these plants' parts were collected and approximately equal proportion (estimating weight) was taken for washing. The mixture was crushed by using traditional mortar and pestle made of iron. The crushed mixture was boiled in water for more than 3 hours in an iron bowl. It was then filtrated with a clean cotton cloth and, the filtrate was then, used as the medicine of Shingles.

According to the folk-healer, this knowledge of preparation of medicine was obtained from his father and some of the ancient Hindu scripts during his young age. According to his experience, if any plant among these six species is eliminated or if other look-alike plants are used in place of them, the effectiveness of the extract gets reduced. The healer claimed that he had cured over 250 patients. Many of them had already tried hospital medication but uncured and came to him for the treatment due to his fame and belief. Mantras (some kind of sacred utterance) are also chanted before medication and the plant extract is then applied to the wound with a feather twice or thrice a day according to the wound severity. He claimed that even not a single person has returned back to him to date with the complaint on his treatment or reoccurrence of Shingles.

The folk healer stated that the wound recovery time after using his medicine from plants' extract is 7-15 days if the extract is used immediately from the first day of the symptoms. The recommended amount of the extract is about 50-200 ml (according to the area covered by Shingles) 2-3 times as per the severity of the disease.

## The perspective of local people towards ethnomedicine

On the question, "whether they have visited the hospital or not for their treatment of Shingles?", 25 informants (83%) have answered that they didn't visit any hospital or taken any allopathic drugs rather they have treated Shingles by using folk-healer medicine (Fig 2). On the question, "what is their recommendation for other patients?" 17 informants (57%) recommended to visit only the folk-healer for the treatment but 9 informants (30%) recommended to visit both the hospital and folk-healer. Only 4 of them (13%) recommended to visit the hospital first (Fig 3) and if the wound is not cured by allopathic medicine the folk healer's medicine should be used.

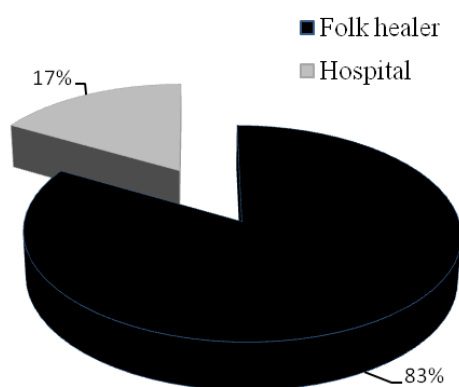


Fig 2. Number of informants visiting the folk healer for treatment of Shingles.

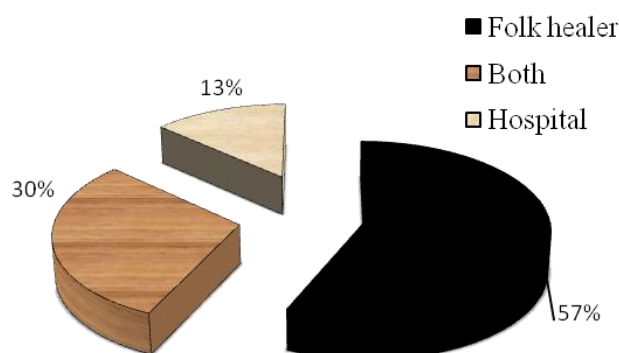


Fig 3. Number of informants who recommend folk healers to other patients for the treatment of Shingles.

## DISCUSSION

The plants used by the folk-healer are found to have properties like anti-viral, antimicrobial, anti-inflammatory, quick healing of wound and skin disease and hence, the traditional practice of the folk-healer is scientific and an effective way for curing Shingles.

Previous studies on *Oroxylum indicum* have shown that the bark extract has antimicrobial and anti-inflammatory activities due to the presence of flavonoids, phenols, and saponins [24 - 27]. Luitel et al. (2010) reported the presence of flavones and sterol from Nepalese species of *O. indicum*. The aqueous extract of this plant is effective against the Chikungunya virus (CHIKV) showing a significant reduction in the viral titre [3]. Paste prepared from the stem and root bark of this plant is also traditionally used in the treatment of skin diseases and cuts and wounds [17, 28]. In Vivo study on wound healing and antimicrobial properties of extracts has confirmed that the utilization of *Oroxylum* in infectious diseases is scientific [26].

The crude extract of *Cynodon dactylon* has viru-static and virucidal activity against Porcine Reproductive and Respiratory Syndrome Virus (PRRSV) [29]. This plant also has antimicrobial activity against several bacteria [30 - 31]. Extract of another species *Lycopodium japonicum* has been used as an expectorant [32]. Fresh roots of this species can be boiled with mustard oil and used in skin diseases like scabies, eczema, and for rheumatism, sprains, and cut wounds, they are reported to be particularly useful for carbuncles [32]. Paste prepared from aerial parts of the plant and crude juice are applied to treat herpes [33-34].

The petroleum ether, ethanol, and chloroform extract of leaves and roots of *Centella asiatica* show the inhibitory effect on bacteria and fungi [35-36]. The essential oil extracted from this species shows antibacterial activity against both gram-positive and negative bacteria [37]. The plant is also found effective against skin diseases [38], cut and wounds [16, 38], and Herpes Simplex Virus [39].

Another medicinal plant *Sesamum indicum* has been used to extract oil from the beginning of cultivation which is specially used in healing wounds [40], skin protection, and rejuvenation [41]. It possesses antiviral antibacterial, antifungal, and antioxidant properties [42 - 43]. Similarly, *Drymaria cordata* has been reported as a high-value medicinal plant as it possesses antibacterial and anti-inflammatory properties [44 - 45].

The majority of the patients (83% informant) have cured Shingles by the medicine of the traditional healer and therefore, they have not given priority to visit the hospital and allopathic drugs for treatment (Fig 2). Treatment of Shingles with medicinal plants is highly cost-effective as the treatment cost is quite low as compared to the costs of modern medicines. On the other hand, medicine is easily available and more convenient than the modern ones. However, 9 informants (30%) have a recommendation to treat Shingles by folk healer's medicine as well as allopathic medicines. Moreover, 13% of the informant's recommendation is that the patients should visit hospitals before going to visit the folk-healer but if the disease is not cured by allopathic medicine the folk healer's medicine should be used. It indicates the influence of the traditional practice of disease treatment systems on the villagers as well as a strong belief of the people on the system adopted by the folk-healer.

## CONCLUSION

In conclusion, a total of six species (*Oroxylum indicum*, *Cynodon dactylon*, *Centella asiatica*, *Drymaria cordata*, *Sesamum indicum*, and *Lygodium japonicum*) were documented as the medicinal plants used

for the treatment of Shingles by folk-healer in the study area. A long experience and strong belief of the healer on the effectiveness of these plants against Shingles and inclination of people towards the healer's traditional system of healing prove that these plants have phytoconstituents to cure Shingles. The plants used by the folk-healer were also reported by various researchers for the treatment of skin-related diseases and in some cases, particularly for Shingles. These findings prove the efficacy and legitimacy of traditional medicines. Furthermore, there is the necessity of extensive lab-based research to isolate the specific compounds that are effective against the disease and conservation of ethnobotanical knowledge before it is completely lost.

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