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Assessment of native medicinal plants in selected mining area of claver Surigao Del Norte, Philippines

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Abstract

This study aimed to document the traditional knowledge on plants by traditional healers in Claver, Surigao del Norte, Philippines. Twenty-nine respondents were identified following a snowball sampling technique and were interviewed on their traditional knowledge and practice of using different medicinal plants. A total of 51 plant species, grouped into 33 Families were recorded which will be used to treat 26 different kinds of human health problems. Leaves (35%) were the most commonly used plant part and oral application (57%) was found to be the most frequent in the preparation and routes of administration for each medicinal plant species. Aside from the medicinal uses, some of these plants were also used as food. The medicinal plants identified were proven effective by the local traditional healers to cure for certain illnesses, since they were utilizing these various plant species for herbal medicines for several years ago.

Keywords: medicinal plants, traditional healers, herbal medicines, mining area

Introduction

Medicinal plants play a key role in traditional healthcare system. It is used to prevent and treat disease and ailments to promote health and healing. Traditional herbal knowledge is passed from generation to generation in the verbal form by traditional medicinal man ^[1]. In recent years, younger generations are unable to recognize the herbs and possess very little knowledge on traditional herbal remedy. As a consequence, only the elder people possess the knowledge of herbs to treat illnesses. Thus, the traditional knowledge are rapidly eroding ^[2].

Traditional local healer or medicinal man is a person who has no formal training but is recognized by the community in which he/she lives being competent to provide healthcare by using plants, animals and mineral substances and certain other methods based on social, cultural and religious background that are prevalent in the community ^[3]. According to the World Health Organization (WHO), more than 3.5 billion people in the developing world rely on medicinal plants as components of their healthcare. Traditional medicine has been brought into focus for meeting the goals of a wider coverage of primary healthcare delivery, in all countries of the world. Thus, medicinal plants are widely used in the treatment of numerous human and livestock diseases in different parts of the world ^[4].

Caraga Region, which lies in the Pacific side of the Philippine archipelago, has the richest mineral deposits in the country, due to this fact, Surigao Del Norte hosts a number of registered mining firms with its rich iron and nickel deposits. On the other hand, the richness of plant life in the region has been estimated to thousands of different species ^[5].

Mining is one of the reasons of the concerns of many environmentalists due to the disappearance of forestlands that endangered the endemic species ^[6]. Mining activities, threatens and endangers the floral species in the area including the medicinal plants. Mining area of Claver has never been explored before ethno-botanically in detail, so it was felt worthwhile to explore the area to record the indigenous uses of the important medicinal plants in the area. Moreover, Ethno botanical surveys can be very helpful in rescuing and preserving the precious indigenous knowledge and to document the utilization of medicinal plants used by traditional healers in Claver, Surigao Del Norte Philippines.

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Materials and Methods

Selection of respondents

A list of selected local traditional healers from the Barangay was prepared and several visitations and interviews were conducted. The local traditional healers were target respondents as the key informants because they were presumed to be more knowledgeable in herbal medicines. After the interview of the key informants, validation and collection of these medicinal plants in the field was conducted with the aid of local traditional healers.

Collection and Identification of plant samples

Selected medicinal plants were collected in Claver Surigao del Norte for proper identification. Field guide book of plants and taxonomic key were used for proper identification [7-9]. Moreover, these medicinal plants were photographed on its natural habitat for further proper documentation.

Results and Discussions

There are about 51 species of medicinal plants surveyed in Claver, Surigao del Norte, Philippines and were grouped into 44 Genera and 33 Families (Table1). Based on the survey result on medicinal plant parts used for medicinal purposes, the leaves are the most commonly utilized plant part (35) species, followed by roots (8) species while bark and seeds are rarely used to treat various ailments (Figure 1). Plant parts used are prepared as medicine using fresh, dried material or both. Several ethno-botanical surveys conducted in the Philippines reported similar results with the leaves as the most frequently used plant parts [10]. One of the reasons for this is to protect the plants and ensure sustainability in the utilization of the plants and harvesting the leaves are less destructive for the plants [11, 12]. Leaves are also easy to collect and are the most abundant plant parts [13].

Table 1: List of plants with their ethnobotanical uses identified by community in claver, Surigao Del Norte

Scientific Name	Family Name	Plant Parts Used	Ailments/diseases treated
<i>Angiopteris palmiformis</i>	Marattiaceae	Leaves	Relapse
<i>Antrophyum sp.</i>	Vittariaceae	roots	Relapse; gas pain
<i>Areca catechu</i>	Palmae	fruits	Toothache, antimicrobial; gas pain
<i>Artocarpus blancoi</i>	Moraceae	Leaves	Dysentery; fever; diarrhea
<i>Asplenium decorum</i>	Aspleniaceae	roots	antibacterial
<i>Astronia sp</i>	Melastomataceae	Leaves	Fever; Arthritis
<i>Calamus merilli</i>	Palmae	roots	deworming
<i>Calamus sp.</i>	Palmae	roots	fever
<i>Calophyllum inophyllum</i>	Clusiaceae	leaves	Muscle pain
<i>Canarium luzonicum</i>	Burseraceae	Leaves; bark	extreme coughing; Diabetes;
<i>Canarium ovatum</i>	Burseraceae	bark	fever
<i>Chromolaena odorata</i>	Verbenaceae	Leaves	Muscle cramps; antibacterial; swelling
<i>Cinnamomum mercadoi</i>	Lauraceae	Leaves; bark	Relapse; gas pain
<i>Commelina diffusa</i>	Commelinaceae	leaves	Avoid bad spirits
<i>Commelina sp.</i>	Commelinaceae	Leaves	Veins & bone misalignments
<i>Corypha elata</i>	Palmae	seeds	Blood clot
<i>Costus spciosum</i>	Costaceae	leaves	toothache
<i>Dillenia philippinensis</i>	Dilleniaceae	Leaves	Cough; diarrhea
<i>Dinorchloa sp.</i>	Palmae	roots	Breast enlargement; Muscle pain
<i>Diospyros blancoi</i>	Ebenaceae	Leaves	Diabetes; Hypertension; fever;
<i>Dischidia sp.</i>	Euphorbiaceae	leaves	Love potions
<i>Donax canaeformes</i>	Zingiberaceae	Roots	Fever; cough
<i>Elatostema pulchrum</i>	Urticaceae	Leaves	Pain reliever
<i>Euphorbia hirta</i>	Euphorbiaceae	leaves	Fever; dengue
<i>Ficus balete</i>	Moraceae	bark	Fractured bones
<i>Ficus nota</i>	Moraceae	leaves	Antifungal; antimicrobial
<i>Freycinetia multiflora</i>	Pandanaceae	leaves	Muscle pain, gas pain
<i>Freycitia sp.</i>	Pandanaceae	Roots	Toothache; hypertension
<i>Gemelina arborea</i>	Verbenaceae	Leaves	Gas pain, muscle pain; swelling
<i>Gingiber sp.</i>	Gingiberaceae	roots	Common colds; sinusitis
<i>Homalomena philippinensis</i>	Araceae	Leaves	Snake Bite; toothache
<i>Imperata cylindrica</i>	Gramminae	roots	Toothache; hypertension
<i>Leucosyke capitilata</i>	Urticaceae	Leaves	Muscle pain
<i>Macaranga tanarius</i>	Euphorbiaceae	Leaves	fever; excessive coughing; diarrhea
<i>Medinilla cumingii</i>	Melastomataceae	Leaves	Cough; fever
<i>Mentha aveninsis</i>	Lamiaceae	Leaves	Toothache; swelling
<i>Mikania cordilofia</i>	Cucurbitaceae	Leaves	Blood clot; antibacterial
<i>Neonauclia formicaria</i>	Rubiaceae	Leaves	Swelling; relapse; fever
<i>Nephrolepis bisserata</i>	Oleandraceae	Leaves	Diarrhea; antibacterial
<i>Ormosia calavensis</i>	Fabaceae	seeds	Appetizer; ulcer
<i>Osmoxylon lineare</i>	Aralliaceae	Leaves	Cough
<i>Pandanus sp.</i>	Pandanaceae	seeds	Love potion
<i>Paspalum conjugatum</i>	Gramminae	leaves	Blood clot; diarrhea
<i>Pinanga insignis</i>	Palmae	Leaves	stomachache
<i>Piper sp</i>	Piperaceae	leaves	Dyspepsia; ulcer
<i>Raphidopora sp.</i>	Araceae	leaves	Antibacterial & antifungal
<i>Schefflera odorata</i>	Araliaceae	bark	avoid bad spirits
<i>Schismatoglottis sp.</i>	Araceae	leaves	tonsillitis

<i>Scleria shrabilata</i>	Poaceae	roots	Hypertension
<i>Sphaenomeris chinnensis</i>	Lindsaeaceae	Leaves	Constipation;
<i>Sphagnum sp.</i>	Bryophytes	leaves	Blood clot; antibacterial
<i>Xantostemon verdugonianus</i>	Myrtaceae	Leaves	gas pain; antibacterial

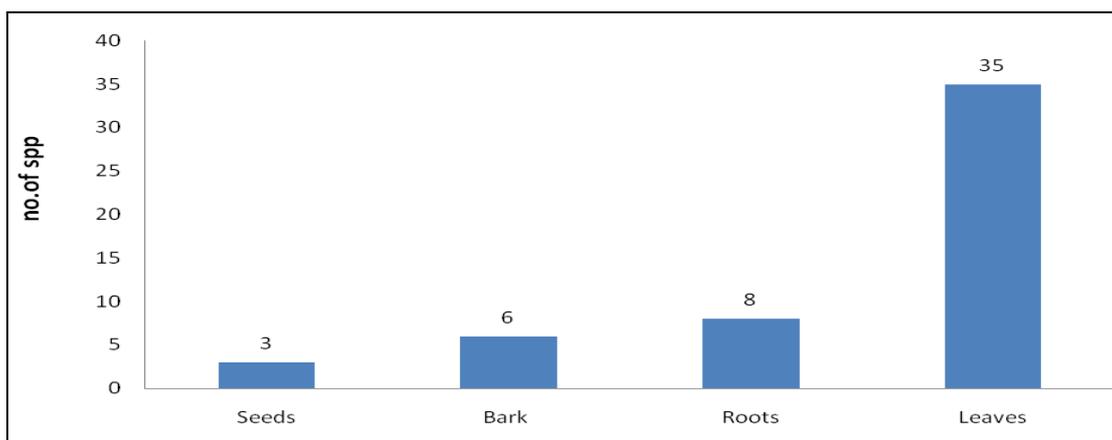


Fig 1: Plant parts use for medicinal purposes

Application and Preparation of medicinal plants

For the method of application, external application (59%) is more frequently employed than the internal application (41%) as shown in Figure 2. The most common form of preparation technique used by the community for remedies made from medicinal plants are decoction (47%) where plant parts are boiled in water and the extract (crude drug) is used, followed by paste (31%) wherein fresh plant parts are crushed with a mortar and pestle, infusion (16%) where plant parts are plunged in water for a few minutes and chewing (6%) where fresh plant parts are chewed (Figure 3).

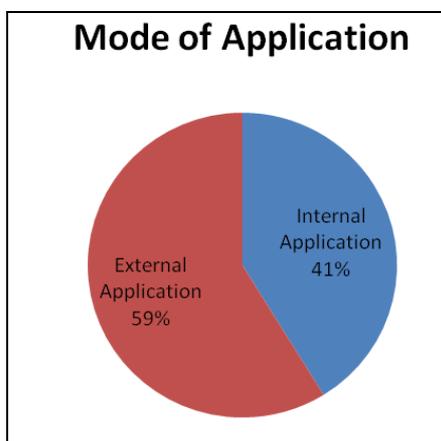


Fig 2: Method of Application

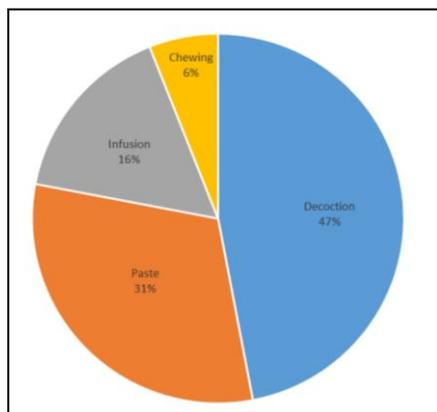


Fig 3: Different Remedy Preparation Methods

The identified medicinal plants mostly treated diseases such as gastro-intestinal diseases (23%), respiratory diseases (18%), wounds/bruises/boils (14%) muscular-skeletal diseases (11%), fever (7%), antimicrobial / fungal (4%), hypertension (2%), skin diseases (2%), blood-related diseases (1%), urinary tract infection (1%), and other diseases (18%) which include toothache, teething for babies, diabetes, goiter, baldness, cancer, burn, cyst, snake bite, pain reliever, love potion, de-worming, dengue fever, and for pregnancy.

Local users strongly believe that herbal plants are so effective that in two to three days their ailments were cured. There is no uniformity in their preparation and dosage. They even claim that there are no over dosage in using these medicinal plants as experienced. Their uses are most beneficial since hospitals and modern facilities are non-accessible. On the other hand, these medicinal plants are getting scarce due to over collection, harvesting style and the mining activities in the area which uses clearing and open pit techniques that endangers all plants in the area.

Conclusion

This study of medicinal plants and their uses shows the rich tradition in the ethno-medicinal knowledge of traditional healers in Claver, Surigao Del Norte, Philippines. The study gave information on the importance of different plants and how it can be used. Most of the plants are shrubs and herbs and mostly found in the forest. The medicinal plants are commonly utilized as decocted leaves and taken internally and externally. This study provides basic information about the medicinal plants used by traditional healers can further be tested for future purposes.

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