ETHNOMEDICINAL PLANTS USED BY TRADITIONAL HEALERS IN BAROBO, SURIGAO DEL SUR, PHILIPPINES

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ABSTRACT

The uses of medicinal plants have a long history and become important sources of the healthcare in the Philippines. However, comprehensive study conducted on the knowledge and practices of traditional healers' medicine in Province of Surigao del Sur are few and not well documented. Thus, a comprehensive study with the aim of identifying and documenting the medicinal plants used by traditional healers in Barobo, Surigao del Sur was carried out. Purposive sampling method was used to select traditional medicinal practitioners of the study area. Semistructured questionnaire, interview and focused group discussion were conducted to gather first hand ethnobotanical information on medicinal plants used by the traditional healers to treat different kinds of diseases and ailments. Fifteen (15) informants were involved in providing information on A total of 45 species belonging to 43 genera in 32 families were recorded to treat several ailments such as cough, stomach ache, wound, urinary infections diarrhea, headache, and fever. Leaves were the most commonly used plant part and decoction was the most widely used method of preparation which was mostly administered internally. The documentation of this rich traditional ethno medicinal knowledge could provide avenues for pharmacological investigations to improve healthcare for a range of ailments.

Keywords: Diseases, ethnomedicinal plants, traditional healers.

INTRODUCTION

The folk medicinal system has a deep rooted history among rural and even urban populations in the Philippines. According to research, using plants as medicine contain a wide range of substances that can be used to treat chronic as well as infectious diseases and are rich in secondary metabolites and essential oils of therapeutic importance (Ayyanar et al., 2010). The important advantages claimed for therapeutic uses of medicinal plants in various ailments are their safety besides being economical, effective and their availability.

Despite many ethnomedicinal studies that were performed all over the world, a relative few documentations on medicinal plants have been done in the Philippines (Gruyal et al., 2014).

In recent years, work on ethnobotanical knowledge in the Philippines has increased. However, despite all ethnobotanical studies performed across the country, ethnobotanical documentation in Mindanao are relatively few, some are focusing on well-known indigenous groups like the Pinatubo Negritoes, the Tasadays in Mindanao, the Itawes of Cagayan, the Ibaloi of Benguet province, the Kalanguya of Ifugao and the Subanens of Zamboanga del Sur (Balangcod, 2011; Balangcod and Balangcod, 2011; Morilla et al., 2014). Furthermore, given the increasing pace of forest destruction and loss of traditional knowledge, it is likely that some unknown or not well known plant species face extinction before their medicinal or other uses can be fully explored.

With further economic development in the Philippines, there is a rapid disappearance of traditional culture and natural resources. In order to preserve traditional medicinal knowledge, it is necessary that researches on various plants with therapeutic value are carried out, and the knowledge related to their use should be documented in systematic studies (Borokini et al., 2013).

The contribution of medicinal plants, the value of the associated indigenous knowledge and practices of the traditional healers in Barobo, Surigao del Sur, Philippines are expected to be evident and high. However, there was no comprehensive study conducted on the knowledge and practices of traditional healers' medicine in the area. Thus, this study was undertaken to reveal and document the traditional medicinal plant knowledge and practices of traditional healers' medicine in the aforementioned area. Information gathered will serve as a basis for future pharmacological investigations and on the conservation of both medicinal plants and indigenous knowledge.

METHODS AND MATERIALS

Barobo lies in the central part of the province of Surigao del Sur. It is located between 8'34'00" and 8'25'00" latitude and 125'59"00 and 126'22'4" longitude. It is bounded on the north by Lianga Bay and the municipality of Lianga, on the south by the municipality of Tagbina, on the southeast by the municipality of Hinatuan, on the east by the Pacific Ocean, and on the west by the municipality of San Francisco, Agusan del Sur.

It has total land area of 24,250 hectares (59,900 acres). It is linked by a national road to the provincial capital of Tandag, Surigao del Sur, of 103 kilometers and the gateway to the regional center of the Caraga Region in Butuan City of 107 kilometers.

Barobo comprising of 22 barangays, namely Amaga, Bahi, Cabacungan, Cambagang, Causwagan, Dapdap, Dughan, Gamut, Javier, Kinayan, Mamis, Poblacion, Guinhalinan, Rizal, San Jose, San Roque, San Vicente, Sua, Sudlon, Tambis, Unidad, and Wakat

Barangay Gamut, Cabacungan, Sua and Unidad were chosen as study area considering that these four barangays are convenient to the researcher to conduct a survey and interview. These area can be reached by any vehicles from Poblacion, Barobo, Surigao.

Data collection

In this study, a search of traditional healers in the selected villages Barobo was conducted with the prior permission and referrals by the community leaders. Thus, 15 Key informants (traditional healers) were purposely selected using information and recommendations of local officials, tribal administrators, knowledgeable elders and religious leaders as well as the local community. Researcher started his interaction with each prospective respondent by first explaining the aims and objectives of the study in order to solicit their consent and co-operation before any ethnobotanical data was gathered. During these discussions the researcher emphasized the immense value which each traditional healer's contribution could make to the compilation of a record of traditional knowledge of medicinal plants in the aforementioned area.

Semi structured interviews were prepared, field observation and group discussion were accomplished. The interviews and discussions were conducted in the local language, Kinamayo, and translated to English for reporting. Information collected includes local name of the traditional medicinal plant, diseases treated, parts used, and method of preparation and route of administration. Based on ethno botanical information provided by informants, specimens were collected, photographs of every specimen were taken during the survey. The gathered data were identified with the help of literature from different published articles and websites.

RESULT AND DISCUSSION

Table 1: Lists of Ethnomedicinal Plants Used by Traditional healers

Family	Scientific name/Plant Species	Local/Vernacular name	Plant form	Plant Parts used	Methods Used/Mode of Preparation and Application	Medicinal uses
Annonaceae	*Annona squamosa*	Atis	Tree	Leaves	Poultice	Headache and Stomachache
Annonaceae	*Anonamuricata L.*	Abana	Tree	Leaves	Decoction of leaves and then drink	All forms of ailments/diseases
Euphorbiaceae	*Jatropha curcas*	Tada-Tada	Tree	Leaves & Stem	Put the leaves to the affected part of the body Scrape the stem and then preheat, pound,	Tetanus, wounds, fever, Flatulence, and Gastroenteritis

					and rub to the affected part of the body	
Elaeocaraceae	*Muntingia calabura L.*	Mansanitas	Tree	Leaves	Infusion of leaves then drink three times a day	Diarrhea and stomachache
Fabaceae	*Caesalpinasuppan Linn.*	Sibukaw	Tree	Stem	Scrape the stem and pound to get the extract juice	Leukemia, cancer, and fatigue
Lamiaceae	*Premna odorata*	Aggau	Tree	Leaves & Stem	Extraction and Poultice	Skin disease and allergies
Lauracea	*Cinnamonmum mercadoi*	Kalingag	Tree	Leaves	Decoction	Cough, Nausea, vomiting, and hypertension
Meliaceae	*Sandoricum koetjape (Burm.f.) Merr.*	Santol	Tree	Leaves	Decoction then use as bath.	Cough
Moraceae	*Ficuspseudopalma Blanco*	Lubi-Lubi	Tree	Leaves	Boil with water and then drink	kidney failure
Moraceae	*Artocarpus heterophyllus lam.*	Nangka	Tree	Roots	Boil with water and drink three times a day	Diarrhea and stomach ache
Oxalidaceae	*Averrhoa carambola L.*	Balingbing	Tree	Leaves	Decoction, cool down, use as cold compress	Fever
Sapotaceae	*Chrysophyllum cainito*	Kaimito	Tree	Fruits and Leaves	Eating in a fresh state and decoction	Diabetes and wound infections
Labiatae	*Coleus blumei*	Manyana	Herb	Leaves	Preheat the leaves and pound before applying to the affected part of the body	Cold sores
Alliaceae	*Allium odorum L.*	Ganda	Herb	Leaves	Roast partly and rub on the affected part of the body	Stomach ache and Flatulence

Amaryllidaceae	*Allium ampeloprasum L.*	Sibuling	Herb	Leaves	Preheat the leaves, then rub thoroughly around the affected part	"Alpresiya"
Asteraceae	*Astemisia vulgaris L.*	Hilbas	Herb	Leaves	Preheat the leaves and then rub to the affected part of the body	Fever, morning sickness, cough and Flatulence
Asteraceae	*Chromolaena odorata (L.) R.M.King & H.Rob*	Hagunoy	Bushy herb or subshrub	Leaves	Poultice, extraction and apply directly to the affected area, Decoction and applied directly all over the body.	Bleeding, wounds
Compositae	*Blumeabalsamifera*	Sagbong	Herb	Leaves	Decoction of leaves and then drink	Cough, Kidney stone, and urinary tract infection
Crassulaceae	*Bryophyllumpinnatum (Lam.) Oken*	Anhelika	Herb	Leaves	Pound the leaves to soften and then apply it to the affected part of the body	Swelling Toothache
Lamiaceae	*Ocimum basilicum L.*	Basil	Herb	seed	Extraction and apply directly to the affected area.	Sore eyes
Lamiaceae/ Verbenaceae	*Coleus aromaticus*	Kalabo	Herb	Leaves	Decoction of leaves and then drink	Cough
Lamiaceae	*Ocimum basilicum*	Kamangi	Herb	Leaves	Decoction	Cough
Lamiaceae	*Origanum vulgare*	Origano	Herb	Leaves	Decoction	Urinary Tract Infection (UTI)
Leguminosae	*Mimosa pudica*	Hibi-Hibi	Herb	Roots	Crush the roots and then pound and apply directly to the affected part	Wound

Piperaceae	*Peperomia pellucida*	Sinaw-sinaw	Herb	Stem and Leaves	Decoction of stem and leaves and then drink	Urinary tract infection(UTI) and fever
Araceae	*Philodendron lacerum*	Bagawak	Shrub	Leaves	Poultice	Sprain and Stomach ache
Apocynaceae	*Rauwolfia serpentina*	Serpentina	Shrub	Leaves	Decoction	cough
Boraginaceae	*Carmona retusa*	Buyo-buyo	Shrub	Leaves	Poultice	Body pain and cough
Euphorbiaceae	*Manihot esculenta*	Bulanghoy	Shrub	Leaves	Decoction	wound, Infection and hypertension
Fabaceae	*Cajan indorum Medik.*	Kadios	Shrub	Leaves	Extraction	Diarrhea
Fabaceae	*Cassia aleta L.*	Asunting	Shrub	Leaves	Pound to soften and rub directly to the affected skin	*Tinea versicolor "Ap-ap"*
Tiliaceae	*Triumfetta bartramia*	Moropoto	Half-woody shrub	Roots	Decoction	*Stomachache, headache, muscle pain,UTI,Liver disease, and gall bladder*
Cucurbitaceae	*Ipomea Batatas*	Kamote	Creepers	Leaves	Decoction	Diabetes and Wound Infection
Cactaceae	*Cynosurus pectinatus Lam.*	Bila-bila	Grass	Leaves and stem	Poultice, apply directly on the affected are	Fractures and sprain
Compositae	*Distreptus spicatus* var. *int errupta* Ram.Goyena	Dila-dila	Grass	Whole plant, Leaves	Decoction, extraction and apply directly to the affected areas	Cough, stomach ache and bleeding wounds
Poaceae	*Chrysopogon*	Amorseko	Grass	Roots	Decoction	Stomachache
Poaceae	*Imperata cylindrica*	Kugon	Grass	Roots	Decoction	Stomach ache, head ache, muscle pain, urinary tract infection, liver disease, and gall bladder stone
Poaceae	*Sida acuta Burm.f.*	Silhigon	Grass	leaves	Decoction	Stomachache

Poaceae	*Cymbopogon citratus (DC.) Stapf*	Tanglad	Grass	Leaves and roots	Decoction, extraction then rub on the forehead.	Hypertension and diarrhea
Basellaceae	*Basella rubra L.*	Alugbati	Vine	Leaves	Decoction, drink 2 glasses a day.	Stomachache
Cucurbitaceae	*Cucurbita maxima Duchesne*	Kalabasa	Vine	Leaves	Extraction apply directly on the affected area.	Dandruff
Menispermaceae	*Tinospora gibbericaulis Hand.-Mazz.*	Paliaban	Vine	Stem	Decoction	Stomachache
Piperaceae	*Piper betle*	Kanisi	Vine	Leaves	Poultice	Sprain
Solanaceae	*Capsicum annuum*	Sili	Spice	Leaves	Poultice	Boil and wounds
Zingiberaceae	*Zingeriber officinale*	Luy-a	Spice	Rhizome	Decoction	Cold and cough

The utilization of plants for traditional medicine is established, maintained and developed in all indigenous communities in the world. In the Philippines, the knowledge is intrinsic among indigenous groups and is inherited from their great ancestors by oral/verbal communication (Balangcod and Balangcod, 2011; Morilla et al., 2014). In this study, a total of 45 plant species were documented as medicinal plants used by the traditional healers among the four barangays in Barobo, Surigao del Sur. These species corresponds to 43 genera in 32 families (Table 1).

The highest number of species was represented by family Lamiaceae (five species) followed by family Poaceae (four species), Annonaceae, Asteraceae, Compositae, Euphorbiaceae, Fabaceae, Moraceae (two species) and the rest of the plant families with a single species only. Based on the responses and personal observations, the common health problems are cough, stomach ache, wound, urinary infections diarrhea, headache, and fever ailments. As access to modern healthcare is limited, majority of the people in Barobo resort to traditional healthcare practices although some use both traditional and modern medicine.

The family of Lamiaceae, commonly known as the mint family, provided a large number of medicinal plant species in this study. This family is important for flavors, fragrance and medicinal purposes. A study on ethnobotany, pharmacology and phytochemistry of Lamiaceae showed that some species have been used in folk medicine as remedies in the treatment of several disorders (Yalçın et al., 2007). In

addition, the pharmacological effects of these plants have been clinically proven to have medicinal values (Stuart, 2018).

Leaves were further observed to be the most widely used plant part. Respondents also indicated the use of roots and stem in the treatment. Other of the plant parts such as fruit and seeds were rarely mentioned. According to Kumar and Chaturvedi (2011), leaves are the site of manufacture and storage of many chemical compounds through photosynthesis including alkaloids, tannins, coumarines, flavonoids, essential oils and inulins which are active component of most herbal preparation in high concentration. The use of the leaves also provides conservation for the plants compared to those remedies that require roots or whole plants in which the plant should be uprooted. Besides, leaves are the most abundant plant part that are easier to collect and can also be regenerated.

Moreover, the consumption of various leaf extracts ensures better preparation of active ingredients for medication (Focho et al., 2011). Similar studies conducted reported that most of the common remedies were taken from the leaves which also include modified leaves and young shoot of the plants (Balangcod and Balangcod, 2011; Olowa et al., 2012; Blasco et al., 2014; Morilla et al., 2014; Fiscal, 2017). Some of the plant parts are utilized to cure more than one ailment. For instance, the leaves of Artemisia vulgaris are used to cure fever, morning sickness, cough and vomiting. The different parts obtained from a plant species were also noted to treat various ailments. Imperata cylindrica for example is used as remedy against stomach ache, head ache, muscle pain, UTI, liver disease, and gall bladder stone by utilizing its roots respectively.

Basically, the method of preparation by the traditional healers of Barobo with the use of the intact plant through decoction, poultice, extracting, heating, boiling and drying. Both internal and external methods of administration were demonstrated in the present study. In most cases, the administration routes were external rather than internal differing significantly from practices (Giday and Ameni, 2003; Ragunathan and Solomon, 2009; Upadhyay, 2011).

The most common method is decoction or boiling, similar to the report of Rachid et al. (2012), Blasco et al. (2014) and Fiscal (2017). With the extensive use of decoctions, there is no written document on how these preparations were exactly prepared, leading to scrutinize how excessive amount of heat could possibly degrade bioactive phytochemical constituents, particularly the antioxidative polyphenolic substances which have several therapeutic uses. The use of poultices, emollients and rubefacients as topical preparations gave no information on hygienic considerations as most of the plant parts used herein are crushed. The leaves which are expected to contain most of plants' bioactive constituents are the most widely used in this survey.

CONCLUSION

This study has demonstrated that many plant species play an important role in local healing practices and that knowledge of traditional medicine is still utilized and plays a significant role in Barobo, Surigao del Sur. The documentation of this rich traditional ethnomedicinal knowledge has furnished us vital information that will not only provide tangible proof of a well-documented and knowledge about medicinal plants but also could provide new avenues for pharmacological investigations to improve healthcare for a range of ailments.

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