PHYTOCHEMICAL SCREENING OF THE USEFUL PLANTS UTILIZED FOR THE SAMA TABAWAN TRADITIONAL HEALINGS, TAWI-TAWI, PHILIPPINES

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Abstract: *This paper focuses on the phytochemical screening of the useful plants utilized for the Sama Tabawan traditional medicines. The traditional healing knowledge and practices of using medicinal plants for home cures and remedies have been handed down from generation and generation of the Sama Tabawan. Tabawan is a remote island in Tawi-Tawi, Philippines, where no medical facilities exist. The people have relied on herbs and traditional healers as sources of medication and healing. The traditional healing practice of this Sama group is threatened as the local healers are getting older and the young apprentices are prohibited from practicing it when the elderly predecessors are still alive. The study utilized phytochemical screening and analysis as a method of data collection. The result revealed that local herbs contain an abundance of flavonoids, steroids, tannins, saponins, and other properties potentially utilized in the production of commercial medicines. These local herbs are utilized by the Sama Tabawan as curing recourse. The healing practice of the Sama Tabawan has utilized a combination of herbal concoctions in synergism with other medical means available on the island for curing various illnesses either applied internally such that treating diseases within the body system or externally to treat skin diseases, burns, and wounds.*

KEYWORDS: Sama, Tabawan, traditional healing practices, phytochemical screening, medicinal plants

1.0 INTRODUCTION

Throughout history, herbs and other natural elements have been used in cultures across the globe to promote health, provide protection, ease pain and suffering, and facilitate spiritual enlightenment. Traditional medicine is an ancient medical practice that existed in human societies before the application of modern science and health and became part of society's cultural heritage [1]. In ancient China, herbs and roots of plants were used to treat various ailments dating back thousands of years. It is documented that while modern advances in science and medicine have brought humans invaluable medications, treatments, and therapies, many of the world's oldest remedies and practices are still widely used and considered highly effective [2]. Although modern medicine has been accepted by a large population of the world, only in recent years has there been a new look at natural remedies, home remedies, and simple ways of using plant materials that are easily available [3].

In the Philippines, there are many useful plants that have the potential for modern botanical medicines [4], and are used by many ethnic Filipinos such as Ilocanos, Ifugaos, and the Aetas of the Cordillera Region for treating different illnesses [5]. The indigenous practices of herbal medication have persisted for centuries and continued to be used in our modern lives, especially by the indigenous peoples living in remote places in the Philippines.

Being away from hospitals and pharmacies, the inhabitants of Tabawan have always resorted to local alternatives such as traditional healing, which is traditionally practiced by the Sama Tabawan utilizing medicinal plants grown naturally on the island. They have been observing the practice of using the healing

power of herbs by the local healers who used their leaves, stems, roots, and barks for curing illnesses since time immemorial. This local practice is persistent due to the high cost of hospitalization and medicines in the local stores, especially for serious illnesses, and the unavailability of pharmacies and hospitals coupled with insufficient modern medicines available in the locality [6]. Lessons learned from other countries show that people are now more prepared to look for alternative approaches to maintain their health. Moreover, the demands for traditional medicines from the public, and their growing economic importance have led to increased interest on the part of both governments and academic communities in many places in the Western Pacific Region [7]. This issue takes on greater relevance when viewed on the context of the Sustainable Development Goals of the United Nations Framework for Transforming the World by 2030 stating, among others, that healthy lives and well-being for all ages are ensured and promoted through, among others, support the research and development of medicines for the communicable and non-communicable diseases, particularly in developing countries like the Philippines [8].

2.0 METHODOLOGY

The study harnessed the information using the phytochemical screening for chemical properties of plants extracted and utilized as folkloric medicines for traditional healing. A series of laboratory tests were conducted following a laboratory guide for phytochemical and biological screening [9] which was used as a reference.

Parts of the plants utilized as alternative medicines for traditional healing were brought to the laboratory for phytochemical analyses. The freshly gathered plant materials (plant parts) were collected and preserved using the appropriate preservation method such as natural air drying which was suitable for leaves, flowers, and delicate herbs to determine the active chemical substances contained in the plants for medicinal uses. The preservation was usually spread on clean paper (not newsprint) in a shady, well-ventilated spot. Plant fragments that contain volatile essential oils should always be dried in this way since they lose their potency if dried too rapidly at high temperatures. Moreover, plant parts that are difficult to dry, such as fleshy fruits and roots, need to be dried out by heating. This method is also suitable for mature flowers. Ideally, they should be left out for a day or two in a well-ventilated spot, then dried at a temperature of up to 450C [10].

The collection of herbs was limited to Tabawan Island and their identification was based on the indigenous knowledge of the local healers as the plants are locally known to them. However, these plant species were further subjected to identification by plant experts for scientific nomenclatures. Steps involved in plant collection and the general techniques involved in phytochemical screening through various tests [11].

3.0 RESULTS AND DISCUSSION

3.1 The Sama Tabawan Local Healing Practices

Traditional healing is one of the common practices of the Sama Tabawan and is handed down through generations [12]. The Sama Tabawan prepared their herbal medication following certain beliefs and processes from the time of herb extraction to its utilization as locally processed home cure medicines. The processes involved in the preparation of herbal medicines include washing, cleaning, chopping, and finally, making these plant materials into herbal concoctions by soaking, boiling, grinding, and chewing or crumpling/squeezing the utilized plant materials. All the traditional healers claimed to use ordinary water in washing and cleaning the chopped plant materials used for local medicines.

The preparations of herbal concoctions by the Sama Tabawan are not the same as it depends on the herbs to be used for healing. Different herbs and medicinal plants require different methods of preparation in order to attain their optimal effectiveness. Each medicinal plant can treat one or more ailments depending on what plant materials are used as extracts. The plant materials used are roots (most often used), stems, leaves, and barks. Stems are used for substitutions in case the roots are difficult to extract as in the case of huge trees or vines in which their roots are difficult to trace in bushy areas. The boiled or soaked roots of mixed herbal species are to be taken internally. But the crumpled, powdered, or heated leaves as well as ground stem or scraped bark are applied externally. Moreover, the dosage depends on the amounts of plant materials and water used as prescribed by the local healers. Moreover, the duration of treatment was reckoned from the start of treatment up to the time when the signs of curing for illness or disease treated are manifested [13].

3.2 Properties of Indigenous Herbs Used for Local Healing by the Sama Tabawan

In curing the illnesses of sick individuals, the local healers have used indigenous herbs found on the island by utilizing their leaves, roots, bark, and flowers. Active herbal compounds belong to a number of different classes of chemical substances. Different parts of plants have contained different bioactive elements such as essential oils, alkaloids, flavonoids, tannins, saponins, anthraquinones, and other active substances which are the potential for curing specific ailments some herbs contained active chemicals, which may be neutral in terms of their effects, or they may support the effects of the active ingredients and work synergistically when mixed or they may, in some cases, be antagonistic, and thus, their utilization when combining these plants for folkloric medicines should be taken with extra care and caution [14].

The herbs have often been utilized in combination with each other depending on what illnesses are being treated. These herbal plants commonly utilized for local medicines have been subjected to phytochemical analysis to determine their properties for their scientific validation (Table 1).

Table 1. Properties Present in the Local Herbs

Local Name	Scientific Name	Properties Present
Sadsad	*Phyllodium pulchellum* (L.) Desv.	High content of Flavonoids, Saponins, Steroids & Tannins, & with small amount of Alkaloids
Kindang-Kindang	*Dendrolobium umbellatum* (L.) Benth.	High content of Flavonoids, Steroids & Tannins, with moderate in Saponins, & with small amount of Alkaloids
Baloh	*Cordia subcordata* Lam.	High content of Flavonoids, Saponins, Steroids & Tannins, with moderate in Alkaloids, & with small amount of Anthra-quinones
Suntih	*Carmona retusa* (Vahl.) Masam.	High content of Flavonoids, Steroids & Tannins, & with small amount of Alkaloids & Saponins
Tandalabat	*Breynia vitis-ideae* (Burm. F.) C.E.C. Fisch.	High content of Alkaloids, Flavonoid, Saponins, Steroids & Tannins
Tallang-Tallang	*Catharanthus roseus* L.	High content of Flavonoids, Steroids & Tannins, with moderate in Alkaloids
Amboway	*Pongamia pinnata* (L.) Pierre.	High content of Flavonoids, Saponins, Steroids & Tannins, & with small amount of Alkaloids
Pendot	*Ficus septica* Burm. F.	Very high content of Tannins, high content of Alkaloids, Anthra-quinones, Flavonoids, & Steroids, & with small amount of Saponins
B'lluh	*Garuga floribunda* Desne.	High content of Alkaloids, Steroids & Flavonoids, moderate in Saponins & with small amount of Tannins
Ugiyap	*Clerodendron minahasse* Teysm. & Binn.	High content of Alkaloids, Flavonoids, Saponins, Steroids & Tannins, & with small amount of Anthgra-quinones
Kinakan Kangag	*Tabernaemontana pandacaqui* Poir.	High content of Alkaloids, Flavonoids & Saponins, Steroids & moderate in Tannins
Bilang Deya	*Portulaca oleracea* L.	High content of Alkaloids, Flavonoids, Saponins, & Steroids
Pangih-Pangih	*Portulaca pilosa* L.	High content of Flavonoids, Saponins & Steroids, moderate in Alkaloids

Leget	*Gymnosporia spp.*	High content of Flavonoids, Saponins, & Steroids, moderate in Tannins, & with small amount of Alkaloids
Sumping Kalitan	*Ardisia spp.*	High content of Alkaloids, Flavonoids, Saponins, Steroids & Tannins
Tulak Mamis	*Croton spp.*	High content of Flavonoids, Saponins, Steroids & Tannins
Basih-Basih	*Callicarpa spp.*	Very high content of Flavonoids &Tannins, high content of Steroids & moderate in Alkaloids & Anthra-quinones
L'ppay Deya	*Laportea spp.*	High content of Anthra-quinones, Flavonoids, Saponins, Steroids & Tannins, & with small amount of Alkaloids

These medicinal plant species commonly utilized for home cure medicinal alternatives have been subjected to phytochemical screening to determine the properties contained in those plants. The results of this plant properties screening are shown in Table 2.

Table 2- Results of the Phytochemical Screening

Plant Sample	A	AQ	CG	F	S	ST	T
Amboway	(++)	(-)	(-)	(+++)	(+++)	(+++)	(+++)
Baloh	(++)	(+)	(-)	(+++)	(+++)	(+++)	(+++)
Basih-Basih	(++)	(++)	(-)	(+++)	(-)	(+++)	(+++)
Bilang Deya	(+++)	(-)	(-)	(+++)	(+++)	(+++)	(-)
B'lluh Kinakan	(+++)	(-)	(-)	(+++)	(++)	(+++)	(+)
Kangag	(+++)	(-)	(-)	(+++)	(+++)	(+++)	(++)
Kindang-Kindang	(+)	(-)	(-)	(+++)	(++)	(+++)	(+++)
Leget	(+)	(-)	(-)	(+++)	(+++)	(+++)	(++)
L'ppay Deyah	(+)	(+++)	(-)	(+++)	(+++)	(+++)	(+++)
Panggih-Panggih	(++)	(-)	(-)	(+++)	(+++)	(+++)	(-)
Pendot	(+++)	(+++)	(-)	(+++)	(+)	(+++)	(+++)
Sadsad	(+)	(-)	(-)	(+++)	(+++)	(+++)	(+++)
Sumping Kalitan	(+++)	(-)	(-)	(+++)	(+++)	(+++)	(+++)
Suntih	(+)	(-)	(-)	(+++)	(+)	(+++)	(+++)
Tallang-Tallang	(++)	(-)	(-)	(+++)	(-)	(+++)	(+++)
Tantalabat	(+++)	(-)	(-)	(+++)	(+++)	(+++)	(+++)
Tulak Mamis	(-)	(-)	(-)	(+++)	(+++)	(+++)	(+++)
Ugiyap	(+++)	(+)	(-)	(+++)	(+++)	(+++)	(+++)

Legend: A- Alkaloid; AQ- Antra-Quinone; CG-Cyanogenic Glycoside; F-Flavonoid; S-Saponin; ST-Steroid; T-Tannin

Remark:

- \- Negative result (its presence is below the detection limit of the method used)
- \+ Positive result (present in trace or small quantity)

The medicinal plants used by the Sama Tabawan to treat various illnesses have high contents of flavonoids and steroids with no content of cyanogenic glycosides. These are followed by tannins, saponins, alkaloids and only a few of the indigenous herbs screened to contain anthraquinones.

Out of the total medicinal plants screened to contain high amounts of flavonoids, Basih-Basih is the only herb marked as very rich more than any other indigenous herbs tested. Flavonoids are formed in plants and participate in the light-dependent phase of photosynthesis during which they catalyze electron transport. They are reported to have potential as anti-cancer agents, and hence, it is the potential for treating cancerous diseases such as breast cancer, lung cancer, prostate cancer, colon cancer, leukemia, and others [15]. They also show promising potential for useful adjuvants to prevent, delay and/or ameliorate several chronic diseases in aging humans [16].

5.0 CONCLUSION

The traditional healings are still practiced by the Sama Tabawan and used as a recourse for remedy in treating/curing various common and serious illnesses and diseases of sick persons using a combination of herbs and chants in synergism with other medical recourses available in the island.

The Sama Tabawan prepared their herbal medication following certain beliefs and processes from the time of plant extraction to its utilization as locally processed home cure medicines.

The indigenous herbs used by the Sama Tabawan as alternative medicines for treating common and serious illnesses screened to contain several plant properties such as flavonoids, steroids, tannins, saponins, alkaloids, and anthraquinones, which have potential medical benefits as anti-cancer, anti-microbial, anti-diabetes, and many others.

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