



Health seeking behaviour of indigenous people living in Urban areas in Surigao City, Philippines

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Abstract

This study was conducted to determine and provide documentation on the ethnomedicinal plants and health-seeking behavior of the members of Mamanwa tribe who settled in Surigao City. A combination of purposive sampling and focus group discussion approach to thirty-seven (37) participants was done to gather the data needed. Twenty-seven medicinal plants belonging to 20 families dominated by family *Lamiaceae* and *Asteraceae* were identified. The majority of these plants are cultivated and available at the backyard of the respective houses of the participants. The leaves are the parts of the plant that is commonly used that are taken orally. More than half of the participants declared that the juice of these identified plants is usually used for medicine. There are about 22 identified illnesses that can be treated from these medicinal plants. This study demonstrates that there are different kinds of medicinal plants that can treat common illnesses that are present within Surigao City. The knowledge and practices on how to use them plays a significant role in sustaining their health especially now that they are settling in urban areas. Further, the support from the local government is also crucial for the conservation and sustainability of these medicinal plants.

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Introduction

Health seeking behaviour is an action done by one person who notices himself or herself of having a health issue purposely to find the proper medication. Self-care and health seeking behavior is important especially to elders for their everyday life as it helps to improve personal well-being. Self-care practices are vital especially to those who are having self-managed illnesses such as diabetes, hypertension which they are taking maintenance medicines (Irwan, *et al.*, 2016). However, it has been a battle of the health practitioners to come up approaches to make change on the health seeking behaviours that are more effective and sustainable especially to the least fortunate people (Maneze, *et al.*, 2015). The health seeking behaviours of an individual is greatly affected by culture, sociodemographic profile, economic factors, geographical accessibility (Majaj *et al.*, 2013), and perceived quality of services and trust in the health providers (Lau *et al.*, 2020). Trust in health seeking behaviour is a factor that cannot be ignored. Some nations health care systems became highly patchy specifically the government-provided health care because of political and social instability (Majan *et al.*, 2013) that lose people's trust.

The Mamanwa tribe is known to be the surviving oldest ethnic group and is considered as the second poorest indigenous people group in the Philippines. The tribe inhabited in Caraga Region and is distributed in mainly in the three provinces in the region, Surigao del Norte, Surigao del Sur and Agusan del Norte that relies mostly on hunting, upland agriculture, foraging activities, and all the resources they can get from the forest for livelihood and survival (Balacuit *et al.*, 2018). But, slowly as the time goes by the resources provided by nature can no longer suffice their needs along with their increasing population. Thus, this led to some of the tribe members to go down and migrate to urban areas for better living and job opportunities. Moreover, the mining companies' operation in the province of Surigao del Norte provided livelihood, royalties and even granting scholarships to the deserving indigenous people. While living in the mountainous areas of Surigao del

Norte, the Mamanwa tribe relies on the traditional medicinal plants they can get within their ancestral land for immediate treatment of illnesses (Nuneza *et al.*, 2021). Thus, this study aimed to determine the medicinal plants available in the locality of the members of the Mamanwa Tribe who settled in the urban areas.

Materials and methods

Study Area

Surigao City is the capital of the province of Surigao del Norte which has a total land area of 173.91 square kilometers that covered 8.91% to the total land area of the province. The center of the city is located at approximately 9° 47' North, 125° 29' East with an elevation of 29.5 feet above mean sea level. Surigao City was dubbed as the City of Island Adventures probably because of the several panoramic islands with long pristine beaches, mystical caves, vast mangrove forest and underwater sceneries. Surigao City have 1 government hospital categorized as tertiary hospital and 4 private that categorized as secondary hospitals, and 51 health centers located at different barangays of the city. As of 2013 Census, there are about 230 indigenous inhabited within Surigao City that belongs to Mamanwas tribe (SCSEP, 2013).

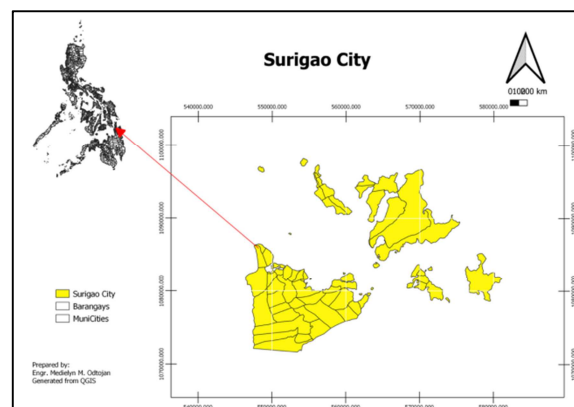


Fig. 1. Map of the study area.

Data Gathering

A total of 37 members of the Mamanwa tribe were interviewed using a semi-structured questionnaire and a group conversation with the traditional healer and tribal leader. The demographic profile to the respondents such as gender, marital status, education

level, economic status, and social support were gathered. Data such as medicinal plants available at their backyard, method of preparation, mode of treatment, and part of the plants used for treatment illnesses were also gathered.

Result and discussion

Herbal plants that are present in the locality used for immediate treatment

These herbal/medicinal plants are dominated by family *Lamiaceae* and *Asteraceae*. The Sambong (*Blumea balsamifera*) and Tawa-tawa (*Euphorbia hirta*) are the

topmost available in the backyard of the participants which consist of 97%. This is followed by Luya (*Zingiber officinale*) consisting 95%, Tanglad (*Cymbopogon citratus*) which is 92% and Karabo (*Coleus amboinicus*) and Tuba-tuba (*Jatropha curcas*) that both consists 81%. While, the medicinal plant that is least available right at their respective areas is Hilbas (*Artemisia vulgaris*) because accordingly this plant is mostly in the wild. This finding is similar to the study of Saro *et al.* (2022) wherein *Asteraceae* has the highest species for the herbal plants used by locals of a barangay in Bayugan City, Agusan del Sur.

Table 1. The list of herbal/medicinal plants those are present in the locality.

No.	Family	Scientific name	Local name	Count (n=37)	Percentage
1	<i>Asteraceae</i>	<i>Blumea balsamifera</i>	Sambong	36	97%
2	<i>Lamiaceae</i>	<i>Coleus amboinicus</i>	Karabo	26	81%
3	<i>Euphorbiaceae</i>	<i>Euphorbia hirta</i>	Tawa-tawa	36	97%
4	<i>Poaceae</i>	<i>Eleusine indica</i>	Bila-bila	13	35%
5	<i>Lamiaceae</i>	<i>Mentha spicata</i>	Herbabuena	25	68%
6	<i>Euphorbiaceae</i>	<i>Jatropha curcas</i>	Tuba-tuba	30	81%
7	<i>Amaryllidaceae</i>	<i>Allium Schoenoprasum</i>	Kutsay (Gandah)	10	27%
8	<i>Poaceae</i>	<i>Cymbopogon citratus</i>	Tanglad	34	92%
9	<i>Zingiberaceae</i>	<i>Zingiber officinale</i>	Luy-a	35	95%
10	<i>Lamiaceae</i>	<i>Vitex negundo</i>	Lagundi	29	78%
11	<i>Asphodelaceae</i>	<i>Aloe vera</i>	Aloevera	7	19%
12	<i>Annonaceae</i>	<i>Annona muricata</i>	Guyabano	22	59%
13	<i>Rubiaceae</i>	<i>Morinda citrifolia</i>	Nino	9	24%
14	<i>Asteraceae</i>	<i>Cosmos bipinnatus</i>	Cosmos	5	14%
15	<i>Amaranthaceae</i>	<i>Alternanthera sessilis</i>	Lupo-lupo	7	19%
16	<i>Musaceae</i>	<i>Musa acuminata × balbisiana</i>	Saba (saging)	31	84%
17	<i>Piperaceae</i>	<i>Peperomia pellucida</i>	Sinaw-sinaw	32	86%
18	<i>Lamiaceae</i>	<i>Coleus scutellarioides</i>	Mayana	23	62%
19	<i>Menispermaceae</i>	<i>Tinospora crispa</i>	Panyawan	31	84%
20	<i>Fabaceae</i>	<i>Senna Alata Linn.</i>	Asunting	32	86%
21	<i>Verbenaceae</i>	<i>Stachytarpheta jamaicensis</i>	Kandila-kandilaan	18	49%
22	<i>Myrtaceae</i>	<i>Psidium guajava</i>	Bayabas	2	5%
23	<i>Urticaceae</i>	<i>Dendrocnide meyeniana</i>	Alingatong	4	11%
24	<i>Asteraceae</i>	<i>Artemisia vulgaris</i>	Hilbas	1	3%
25	<i>Portulacaceae</i>	<i>Portulaca oleracea</i>	Moti-moti	3	8%
26	<i>Moringaceae</i>	<i>Moringa Oleifera</i>	Malunggay	2	5%
27	<i>Zingiberaceae</i>	<i>Curcuma zedoaria</i>	Padla	16	43%

The method of preparation/formulation of each medicinal plant

The majority of these herbal/medicinal plants are served through its juice as declared by the 52% of the participants (Fig. 1). This is followed by decoction (30%) in which the plant will be boiled to extract the medicinal

substances and the water will be used for drinking. Roasting wherein the plant is heat over the fire prior to the application is 14%, while powdering the part of the plant is 2%. The mode of application varies broadly depending on the type of illness being treated. The juice dominated in this study because the cough and fever are

the 2 major illness the Mamanwa tribe treating at home which uses *Blumea balsamifera* (Sambong) as medicine taken orally. Similar findings reported in the study of Gruyal *et al.* (2014) for the ethnomedicinal plants used by residents in Surigao del Sur.

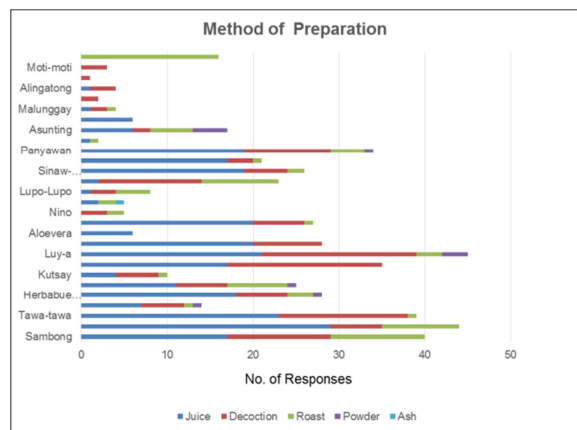


Fig. 1. The method of preparation of each of the herbal/medicinal plant.

The mode of application of the herbal/medicinal plant

The identified herbal/medicinal plants are being taken orally or treat certain or particular illness (Fig. 2). Though the administration varies depending on the kind of plant and type of the illness to be treated, however majority are administered orally except for Asunting, Kandi-kandilaan, and Tuba-tuba, which is more of topical application.

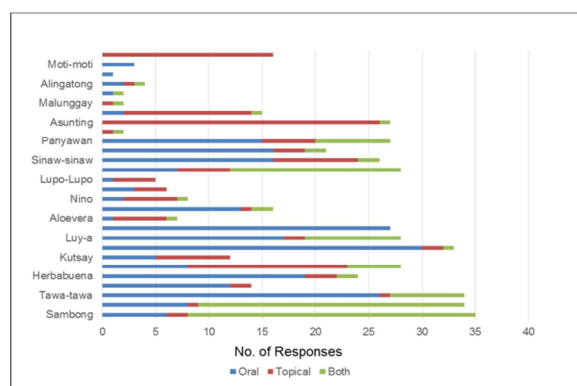


Fig. 2. The mode of administration of each of the herbal/medicinal plant.

For Sambong, Karabo and Saba can be administered through both oral and topical. When combined, oral application has the highest

percentage consisting 51%, while topical and both are almost of the same percentage. Dapar *et al.* (2020) conferred in their study in Agusan del Sur with the Manobo tribe that internal (oral) was the most common means of administration. It was further elucidated that the majority of these medicinal plants is taken orally since most of their health conditions were associated internally.

The part of the plant being used for medicine

As can be gleaned in Fig. 3 below, the most used part of the plant for medicine is the leaves (67%) as it dominated in the plants that were identified. Among the 27 plant species that are used for medicinal plants, there are three (3) that leaves did not dominate, these are the Panyawan in which the branch part is the most useful, the Luya which used rhizome (roots) as medicine, and the Tawa-tawa that recognized the roots as the most useful part for medicine.

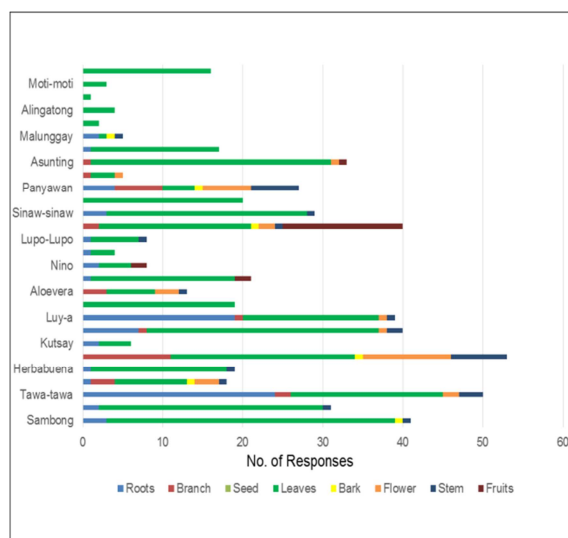


Fig. 3. The parts of the plants being used for medicine.

The study of Paraguison *et al.* (2020) and Dapar *et al.* (2020) which both conducted in Agusan del Sur likewise found out that the leaves part of the plant is commonly used for medicine. As cited in Saro *et al.* (2020) it is in the leaf part of the plant where most of the chemical compounds are stored through the process of photosynthesis that includes alkaloids, tannins, coumarins, flavonoids, essential oil, and inulin's which are effective element of the majority of the preparation that has the highest concentration.

The common illnesses these herbal/medicinal plants can treat

When the participants were asked about the common illnesses that these herbal/medicinal plants can treat, fever (97%) and cough (97%) are the topmost on the list (Table 2). Whilst, cancer and convulsions are the least illness that can be treated by a medicinal plant. As stated in the study findings of Gruyal *et al.* (2014) and Saro *et al.* (2020), cough is the most common illness treated at home using the medical plants available right at their backyard.

Table 2. The common illnesses can be treated by medicinal plants.

Types of Illnesses/ Sickness	Medicinal plants used
Diabetes	Aloevera, Luy-a, Tawa-tawa, Panyawan
Inflammation	Bayabas, Guyabano, Luy-a, Malunggay
Headache/ Fever	Karabo, Luy-a, Malunggay, Sambong, Herbabuena, Tuba-tuba Tawa-Tawa, Saba, Guyabano, Lagundi
Infection	Bayabas, Hilbas
Diarrhea	Bayabas, Tawa-tawa, Mayana, Saba, Guyabano, Sinaw-sinaw, Lagundi, Tanglad, Luy-a, Sambong, Hilbas, Tuba-tuba, Herbabuena, Panyawan
Relapse (Bughat)	Panyawan, Sambong, Malunggay, Bila-bila, Herbabuena, Saba, Luy-a, Tuba-tuba
Cough	Karbo, Luy-a, Malunggay
Colds	Luy-a, Hilbas, Malunggay
Malaria	Tawa-tawa
Ulcer	Aloevera, Bayabas
High blood	Luy-a, Hilbas
Stomach pain	Bayabas, Tawa-tawa, Mayana, Saba, Guyabano, Sinaw-sinaw, Lagundi, Tanglad, Luy-a, Sambong, Hilbas, Tuba-tuba, Herbabuena, Panyawan
UTI	Karabo, Bayabas, Guyabano
Toothache	Panyawan,, Saba, Bayabas, Luy-a, Herbabuena, Sambong, Hilbas
Wounds	Mayana, Malunggay, Kandi-kandilaan, Sinaw-sinaw, Tawa-tawa, Aloevera, Bayabas, Moti-moti, Karabo, Sambong, Bayabas, Saba, Tuba-tuba
Troubled by relative's soul (Gikalag)	Kandi-kandilaan
Bewitched (Warlock)	Panywan, Luy-a
Bewitched (Black magic)	Padla, Tuba-tuba

Treating cough have 2 different modes of application, to treat dry cough, the leaf could be used as massage media on the chest part, while the juice extracted from the leaves will be taken orally to treat the same ailment for fast recovery. Blasco *et al.* (2014) further conferred that pulmonary disease category had reported to have the highest number of uses of medicinal plants.

The commonly used plants for treatment are Tuba-tuba, Luy-a, Saba and Malunggay in which all the 4 can sure about 4 common illnesses. Balberone *et al.* (2018)'s study on the medicinal plants used by the Ilongot-Engongit in Aurora Province found out that respiratory disease has 19 number of use reports which is similar to the findings of this study wherein 1 species can treat several ailments and

Availability of these plants in the area

When it comes to the availability of these medicinal plants in their respective areas, as can be seen in Fig. 4, 89% of the participants cultivates it in the backyard. According to the Mamanwa tribe, they have to make sure these plants are available immediately in times of need. Alduhisa and Demayo (2019) study in the Indigenous People (Subanen tribe) in Ozamiz City conveyed that the medicinal plants are usually planted in their backyard to protect from timber poaching and for it to be readily available when they needed to treat an ailment. Further, the study of Balinado and Chan (2017) likewise reported that 76.6% of their respondents cultivated medicinal plants for their immediate use.

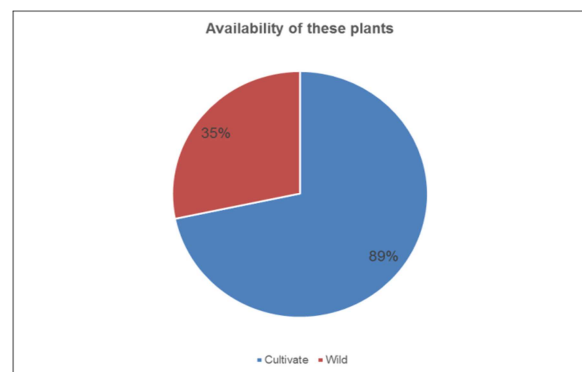


Fig. 4. Availability of the medicinal plants.

Alternative medicine and support from the government

The participants were further asked of their alternative in cases that medicinal plant is not available right at their backyard and in the wild during the occurrence of an illness (Fig. 5). The majority of them responded over the counter medicine or medicine available in the pharmacy (58%), while the 35% will go to the nearest health center for free medicine. During the group discussion with the tribal leader and the traditional healers, they mentioned that they are not into any alternative medicine because it is against their belief. Thus, they will do the best they could to treat a particular ailment.

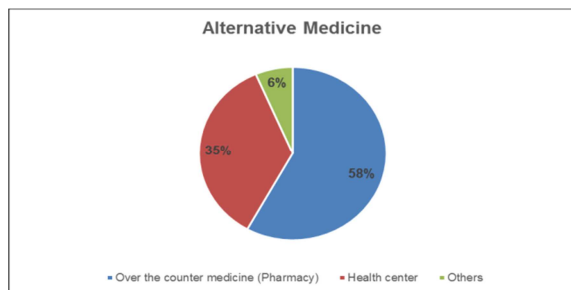


Fig. 5. Alternative medicine in case plant is not available.

It was divulged that this IP community are not receiving any support from the government in terms of making these medicinal plants sustainable. There are few who agreed to received support from some of the government officials, however when asked the form of support it is through using their medicinal plant or available services from the traditional healers. Thus, the support they are getting is from an individual not from the government as a whole.

Conclusion and recommendation

Findings show that ethnomedicinal plant is widely utilized especially by indigenous communities. The members of the Mamawa tribe as part of the study are doing the best they could to protect the source of these medicinal plants. The majority of these medicinal plants are available at the backyard for immediate use. According to the traditional healers, during the peak of CoViD-19, there were no reported members of the tribe being infected with the virus because they are constantly consuming medicinal plants for their protection.

Thus, it is recommended to include the promotion and support of these medical plants in the government programs for its conservation and sustainability.

References

- Ali A, Badshah L, Hussain F.** 2018. Ethnobotanical appraisal and conservation status of medicinal plants in Hindukush Range, District Swat, Pakistan. *Journal of Herbs, Spices & Medicinal Plants* **24(4)**, pp.332-355.
- Balacuit JrCV, Quezada EO, Abay-abay JL, Caluban JR, Cedron LP, Corvera LA, Cuadrado BM, Huerte AA, Montenegro GP, Portillo GA.** 2018. Livelihood and Training Needs of Mamanwa Tribe". *International Journal of Current Research* 10.
- Blasco FA, De Guzman GQ, Alejandro GJD.** 2014. A survey of ethnomedicinal plants in Surigao del Sur Mountain Range, Philippines. *Int. J. Pure Appl. Biosci* **2**, pp.166-172.
- Dapar MLG, Alejandro GJD, Meve U, Liede-Schumann S.** 2020. Quantitative ethnopharmacological documentation and molecular confirmation of medicinal plants used by the Manobo tribe of Agusan del Sur, Philippines. *Journal of Ethnobiology and Ethnomedicine* **16(1)**, pp.1-60.
- Dapar MLG, Meve U, Liede-Schumann S, Alejandro GJD.** 2020. Ethnomedicinal plants used for the treatment of cuts and wounds by the Agusan Manobo of Sibagat, Agusan del Sur, Philippines. *Ethnobotany Research and Applications* **19**, pp.1-18.
- Gruyal GA, Del Rosario R, Palmes ND.** 2014. Ethnomedicinal plants used by residents in Northern Surigao del Sur, Philippines. *Nat Prod. Chem. Res.* **2(4)**, pp.1-5.
- Hussain W, Badshah L, Ullah M, Ali M, Ali A, Hussain F.** 2018. Quantitative study of medicinal plants used by the communities residing in Koh-e-Safaid Range, northern Pakistani-Afghan borders. *Journal of Ethnobiology and Ethnomedicine* **14(1)**, pp.1-18.

- Hussain W, Ullah M, Dastagir G, Badshah LAL.** 2018. Quantitative ethnobotanical appraisal of medicinal plants used by inhabitants of lower Kurram, Kurram agency, Pakistan. *Avicenna Journal of Phytomedicine* **8(4)**, p.313.
- Irwan AM, Kato M, Kitaoka K, Kido T, Taniguchi Y, Shogenji M.** 2016. Self-care practices and health-seeking behavior among older persons in a developing country: Theories-based research. *International Journal of Nursing Sciences* **3(1)**, pp.11-23.
- Lau LL, Hung N, Dodd W, Lim K, Ferma JD, Cole DC.** 2020. Social trust and health seeking behaviours: A longitudinal study of a community-based active tuberculosis case finding program in the Philippines. *SSM-population Health* **12**, p.100664.
- Majaj L, Nassar M, De Allegri M.** 2013. "It's not easy to acknowledge that I'm ill": a qualitative investigation into the health seeking behavior of rural Palestinian women. *BMC Women's Health* **13(1)**, pp.1-10.
- Maneze D, DiGiacomo M, Salamonson Y, Descallar J, Davidson PM.** 2015. Facilitators and barriers to health-seeking behaviours among Filipino migrants: Inductive analysis to inform health promotion. *BioMed Research International* 2015.
- Nuneza O, Rodriguez B, Nasiad JG.** 2021. Ethnobotanical survey of medicinal plants used by the Mamanwa tribe of Surigao del Norte and Agusan del Norte, Mindanao, Philippines. *Biodiversitas Journal of Biological Diversity* **22(6)**.
- Ong HC, Chua S, Milow P.** 2011. Ethno-medicinal plants used by the Temuan villagers in Kampung Jeram Kedah, Negeri Sembilan, Malaysia. *Studies on Ethno-Medicine* **5(2)**, pp.95-100.
- Paraguison LD, Tandang DN, Alejandro GJD.** 2020. Medicinal plants used by the Manobo Tribe of Prosperidad, Agusan Del Sur, Philippines: an ethnobotanical survey. *Asian J. Biol. Life. Sci.* **9(3)**, p.327.
- Saro JM, Daguio JD, Idpalina RAEA.** 2022. Indigenous Plants: An Ethnobotanic Herbal Medicinal Plants Used By L Bayugan City, AGU. *Journal of Current Research* **14(08)**, pp.22059-22063.
- Tanimola MA, Owoyemi JO.** 2009. Healthcare-seeking behaviour in Anyigba, North Central, Nigeria. *Research Journal of Medical Sciences* **3(2)**, pp.47-51.