

Perception on propagation and usage of medicinal plants among partner Barangays in Manila

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Abstract: Medicinal plants are widely used in the Philippines particularly in rural areas as an alternative to synthetic drugs. However, there have been limited studies about the usage of medicinal plants in urban areas.

The aim was to determine the perception of, propagation, and usage of medicinal plants in two partner barangays in Sampaloc, Manila.

A convenience sampling was utilized in the study. The researchers utilized a questionnaire to survey (available in English and Filipino language) on the awareness and knowledge about the utilization, preparation, cultivation, and propagation of medicinal plants of the respondents. A group semi-structured interview was utilized to validate the answers of the respondents. This was done in two partner barangays in Sampaloc, Manila. The data were analyzed using the Informant consensus factor (ICF), Use value (UV), and Relative frequency citation (RFC). The data collection was conducted from October to November 2019.

Both partner barangays perceived that the synthetic agent is still their primary option in treating their ailments due to established safety and efficacy. Furthermore, the partner barangays were not equipped with the basic knowledge in the proper usage of herbal plants in the community herbal garden, and herbal plants were used as adjuvant or supportive treatment.

This study showed that both adopted barangays utilized medicinal plants as an adjuvant in their synthetic medication due to its claimed safety and medicinal plants. The most propagated and cultivated medicinal plant is oregano used as a treatment for asthma and cough was the well-known plant while *banaba*, *sabila*, *gugo*, and *tanglad* were the least. It is recommended that information dissemination campaigns especially on the DOH-approved medicinal plants be strengthened and heightened to increase participation from the barangay counterparts.

Keywords: *medicinal plants utilization; propagation; perception*

1. BACKGROUND

Medicinal plants have always been very important in terms of securing and improving human health. Herbal medicines and other traditional practices are gaining increasing attention despite the advancements in the healthcare system (Singh, Singh, & Prasad, 2016). Modern medicines were discovered through the study of herbal medicines. For a very long time, medicinal plants have been utilized for many purposes from using them as a condiment for food to treating certain health conditions (Dar, Shahnawaz, and Qazi, 2017).

In the Philippines, traditional medicine has been in practice for more than a thousand years and is widely used even in this modern day. Other forms of complementary and alternative medicine introduced from other countries are also used, such as acupuncture, chiropractic, homeopathy, and Ayurveda. According to World Health Organization (2010), there is an estimated 70% of the population uses traditional and complementary medicines and 89% utilize herbal plants for varying disease, symptoms, or cultural needs which biomedicine cannot address, as well for financial reasons. People living in remote areas of the country usually seek medical help from traditional practitioners because of accessibility, availability, and affordability.

Philippines is rich in various herbal plants which are frequently used as a source of medicines due to the high cost of synthetic drugs (Baleta, Donato, Bolaños, 2016). The diverse Philippine flora and fauna offer an alternative remedy for the patient in the marginalized sector and were utilized to prevent, ease, or treat several human diseases (Batugal, Pons, Jayashree, Lee, and Oliver, 2004). Also, there have been more studies and clinical proof conducted that validates many of old age alternative medicines used by Filipino folks (Baleta, Donato, Bolaños, 2016). Different works of literature have been reported on the uses of herbal plants from various rural areas of the Philippines. However, there have been limited studies that document the awareness, propagation, and utilization of medicinal plants in urban areas. Thus, this research covered the awareness of the residents of selected medicinal plants, their propagation, and usage in their respective communities. The main objective of the study was to determine the perception of, propagation, and usage of medicinal plants among partner barangays in Sampaloc, Manila, Philippines.

2. METHODOLOGY

Research Design

The research is a descriptive, quantitative study that utilized a survey method through a questionnaire. A survey was conducted to assess the awareness and knowledge about the utilization, preparation,

cultivation, and propagation of medicinal plants among the residents of two (2) partner barangays in Sampaloc, Manila.

Sampling

A convenience sampling was employed in the study and respondents were chosen based on their age (must be 18 years old and above, the legal age in the Philippines) and must be a resident of the two (2) communities chosen as the locale of the study. Before administering the questionnaire, the objectives of the study were discussed, and a signed copy of the informed consent was secured.

Setting

The setting was selected due to its existing partnership with the University as a partner barangay where community extension services are delivered thru them. Moreover, the pharmacy department aims to partner with them for possible projects like the establishment of a botanical garden and an information dissemination campaign on the proper utilization of herbal medicines. The researchers believe that before its implementation, it is very important to assess first the awareness and knowledge on the utilization, preparation, cultivation, and propagation of medicinal plants of the community respondents.

Statistical Test

The study utilizes percentages to describe and compare the rate for the background on the two barangays on medication use. Furthermore, to analyze the awareness and knowledge on the utilization, preparation, cultivation, and propagation of medicinal plants, Informant consensus factor (ICF), Use Value (UV), and Relative frequency citation (RFC) were employed (Umair, Altaf, and Abbassi, 2017). ICF describes the participants' usage of the selected medicinal plants and variability in the utilization of a disease. Use value (UV) analyzes the relative importance of selected medicinal plants' usage while RFC determines the local importance of each medicinal plant in the study.

3. RESULTS AND DISCUSSION

There are 52 respondents from Barangay 1, while 46 respondents from Barangay 2. The frequency in the table below was expressed in percentage.

Table 1 shows that most of the respondents from two partner barangays preferred using synthetic medicines compared to medicinal plants. Many factors influence the preference of the residents in the treatment of diseases such as knowledge about medicinal plants and their availability. The respondents from Brgy.1 use medicinal plants because they perceived that it is safe for the health (50%) while respondents from

Brgy. 2 use medicinal plants because it is purely natural (36%). In the article of Nisar et.al. (2017), it was mentioned that although medicinal plants are considered less potent in comparison to synthetic drugs, still these are considered less toxic or having fewer side effects in contrast to synthetic drugs. Herbal drugs are useful as a treatment for almost all diseases. In this study, the respondents' usage of medicinal plants was based on their family and/or friends' advice. The result implies that the respondents do not usually seek professional advice about medicinal plants but only rely upon their family and friends. Results showed that the respondents from Brgy. 1 take medicinal plants only when needed and most of the respondents have been taking medicinal plants in 2-3 months while respondents from Brgy. 2 take medicinal plants also when needed and have been taking medicinal plants for more than 5 years. The result implies that the majority of the residents in Brgy. 2 normally use medicinal plants as an alternative treatment for certain diseases.

Table 1. Background of the two barangays on medication use

<i>Indicators</i>	<i>Frequency (Brgy. 1)</i>	<i>Rank</i>	<i>Frequency (Brgy. 2)</i>	<i>Rank</i>
1. Preference in disease treatment				
a. Medicinal plants	32%	2	39%	2
b. Synthetic medicines	68%	1	61%	1
2. Reasons for using synthetic medicines				
a. Proven safe and effective	43%	1	41%	1
b. Widely used by patients	21%	2.5	7%	4
c. Recommended by doctors	14%	3	22%	3
d. Used by family or neighbors	21%	2.5	29%	2
3. Reasons for using medicinal plants				
a. Natural	29%	2	36%	1
b. No harmful effects	15%	3	28%	2
c. Safe for the health	50%	1	11%	4
d. Affordable	6%	4	25%	3
4. Influenced the respondents to use medicinal plants				
a. Family and/or friend	94%	1	84%	1
b. Doctor or other health professionals	3%	2.5	13%	2
c. Traditional healer	3%	2.5	0%	3
5. Duration and frequency of taking medicinal plants				
a. Once a month	9%	3.5	20%	2
b. Twice a month	9%	3.5	10%	4
c. Everyday	21%	2	18%	3

Cont'd. Table 1.

<i>Indicators</i>	<i>Frequency (Brgy. 1)</i>	<i>Rank</i>	<i>Frequency (Brgy. 2)</i>	<i>Rank</i>
d. If needed	61%	1	53%	1
a. 0-1 months	33%	2	32%	2
b. 2-3 months	45%	1	11%	3
c. 4-6 months	0%	5.5	8%	4
d. 1-2 years	0%	5.5	5%	5
e. 2-5 years	9%	4	3%	6
f. More than 5 years	12%	3	41%	1
4. Usage in terms of dosage				
Based on the direction of health practitioner	0%	2	0%	2
Own decision	100%	1	100%	1
5. Places where medicinal plants obtained by the respondents				
Backyard	45%	2	48%	1
Botanical garden	0%	4	10%	3
Clinic	5%	3	4%	4
Market	50%	1	38%	2
6. Methods in propagating medicinal plants				
Cutting of branch/roots for propagation	31%	2	11%	3
Buying and collecting medicinal plants	0%	4	0%	4
Ask somebody to propagate medicinal plants	8%	3	39%	2
Not interested in propagating medicinal plants	62%	1	50%	1

Both communities decide on their own in terms of dosage upon taking medicinal plants. This is consistent with the study of Cerqueira et al., (2020), in which the result of their study shows that most of the respondents used decoctions of leaves that were cultivated in the house (58.4%) to make their herbal preparations. The respondents revealed that medicinal plant preparations were safe and unaware of that are risks associated with their use. Respondents from Brgy. 2 usually obtain medicinal plants in the market followed by the backyard. Respondents from community two (2) obtain medicinal plants in the backyard followed by the market. Results imply that most of the respondents from the two selected barangays normally plant their medicinal plants in their backyard. This is consistent with the result earlier showing that residents Brgy. 2

have been using medicinal plants for more than 5 years and normally use medicinal plants as an alternative treatment for certain diseases. Furthermore, the result also shows that none of the respondents from Brgy. 1 obtain medicinal plants from a botanical garden. This emphasizes the need to establish a botanical garden for both communities to easily obtain medicinal plants. Most of the respondents in both communities have no interest in propagating medicinal plants. This is quite contradictory to the results earlier for community two in which most of the respondents obtain medicinal plants in their backyard. The result suggests that there is a need to conduct a seminar for the proper propagation and cultivation of medicinal plants.

Table 2. List of medicinal plants and their corresponding uses and calculated UV and RCF

<i>Medicinal Plants</i>	<i>Local name</i>	<i>Purpose/s of use</i>	<i>Utilization value (UV)</i>	<i>RCF (Relative frequency citation)</i>	<i>Rank</i>
<i>Euphorbia hirta</i>	<i>Tawa tawa</i>	NR	0.06	0.06	5
<i>Origanum vulgare</i>	<i>Oregano</i>	Asthma, cough	0.14	0.14	1
<i>Moringa oleifera</i>	<i>Malungay</i>	Stomachache, as food supplement	0.09	0.09	3.5
<i>Lagerstroemia speciosa</i>	<i>Banaba</i>	NR	0.01	0.01	7.5
<i>Zingiber officinale</i>	<i>Luya</i>	Skin disease, Wound healing, Strengthen immunity, stomachache; sore throat	0.1	0.1	2.5
<i>Cucurma longa</i>	<i>Luyangdilaw</i>	NR	0.05	0.05	6
<i>Garcinia mangostana</i>	<i>Magosteen</i>	Strengthen immunity	0.02	0.02	3.5
<i>Andropogon citratus</i>	<i>Citronella</i>	NR	0.01	0.01	
<i>Allium sativum</i>	<i>Bawang</i>	NR	0.1	0.1	2.5
<i>Allium cepa</i>	<i>Sibuyas</i>	NR	0.1	0.1	2.5

Cont'd Table 2,

<i>Medicinal Plants</i>	<i>Local name</i>	<i>Purpose/s of use</i>	<i>Utilization value (UV)</i>	<i>RCF (Relative frequency citation)</i>	<i>Rank</i>
<i>Capsicum frutescens</i>	<i>Silinglabuo</i>	NR	0.07	0.07	4.5
<i>Psidium guajava</i>	<i>Bayabas</i>	Skin disease, Wound healing, allergy	0.07	0.07	4.5
<i>Aloe vera</i>	<i>Sabila</i>	Skin disease, Wound healing	0.01	0.01	7.5
<i>Entada phaseloids</i>	<i>Gugo</i>	NR	0.01	0.01	7.5
<i>Andropoho nctratus</i>	<i>Tanglad</i>	NR	0.01	0.01	7.5
<i>Momordica charantia</i>	<i>Ampalaya</i>	Asthma, cough, strengthen immunity, as food supplement	0.09	0.09	3.5
<i>Corchusolitorius</i>	<i>Saluyot</i>	NR	0.02	0.02	3.5
<i>Blumea balsamifera</i>	<i>Sambong</i>	as food supplement	0.02	0.02	3.5

Table 2 presented that most of the respondents from both communities commonly use oregano for asthma and cough while the least common medicinal plants used are *banaba*, *sabila*, *gugo*, and *tanglad*. Many factors influence the respondents in using certain medicinal plants such as their awareness and perception. The result implies that there was a need to conduct an information dissemination campaign about medicinal plants so that the residents in both barangays will eventually learn as to what medicinal plants that they can use for treating a specific disease.

Table 3. Informant consensus factor (ICF) of reported disease category

<i>Reported diseases</i>	<i>Informant consensus factor (ICF)</i>
Respiratory disease	0
Gastrointestinal problem	0.5
Skin problem	1
Immunity	0.17

Table 3 shown that ailments associated with skin were the major disease that herbal medicine necessitates its use in both barangays followed by gastrointestinal and immunity problems.

Table 4. Methods used in preparing medicinal plants as a treatment

<i>Method</i>	<i>Example of a medicinal plant used</i>	<i>Frequency (Community 1)</i>	<i>Rank</i>	<i>Frequency (Community 2)</i>	<i>Rank</i>
Part of diet	Bitter gourd, Guava	25%	2	21%	3
Boiling	Leaves of guava, ginger, lagundi, sambong	33%	1.5	32%	1
Prepared as a tea	Ginger, lagundi, sambong	33%	1.5	27%	2
Dried	NR	0%	5	0%	6
Fresh	Malunggay	6%	3	9%	5
Powdered	Bitter gourd	4%	4	11%	4

Table 4 presents that most of the respondents from community one (1) prepares medicinal plants by boiling and preparing the plants as tea. Respondents from Brgy. 2 prepare medicinal plants also by boiling. None of the respondents from both communities prepares medicinal plants by drying.

Both barangays perceived that the synthetic agent is still their primary option in treating their ailments due to established safety and efficacy. Nisar et.al. (2017) mentioned that with the advancement in the field of medicines, synthetic drugs gradually started replacing natural medicines although the former has some side effects as well. Medicinal plants have also shown effectiveness in various ailments such as diabetes, cancer, and other cardiovascular diseases (Karimi, Majlesi, and Rafieian-Kopaei, 2015). The utilization and relative citation factor indicated that both communities were not equipped with the basic knowledge in the proper usage of medicinal plants in the community herbal garden and herbal plants were used as adjuvant or supportive treatment.

4. CONCLUSION

This study showed that both adopted barangays utilized medicinal plants as an adjuvant in their synthetic medication due to its claimed safety and medicinal plants. The most propagated and cultivated medicinal plant is oregano used as a treatment for asthma and cough was the well-known plant while *banaba*, *sabila*, *gugo*, and *tanblad* were the least. Moreover, both partner barangays claimed that they were not equipped with the basic knowledge in the proper usage of medicinal plants in the community

herbal garden. It is recommended that information dissemination campaigns especially on the DOH-approved medicinal plants be strengthened to increase participation from the barangay counterparts.

Limitation of the Study

The study is limited to determining the knowledge and awareness of the respondents on the perception of, propagation, and usage of medicinal plants in 2 partner barangays in Sampaloc, Manila. A convenience sampling may affect the representation of the respondents. A dramatic difference in their responses in the study suggests poor replicability of the study.

Ethical Considerations

The researchers gained the basic course on Good Research Practice (GRP) from National University. The researchers declared that there is no conflict of interest in conducting the study. An informed consent form indicating the purpose of the study, risks, and benefits, confidentiality, and voluntariness was emphasized to all respondents. The respondents were given 1 week from the invitation to decide on their participation in the study. A data file was secured by placing them in a secured file case using sensitive codes that only the researchers have access to.

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