J-IAMSTEM
Journal of Innovation, Advancement, and Methodology in STEM Education
Vol. 1, No. 5, pp. 255-273, September-October 2024
https://so13.tci-thaijo.org/index.php/j_iamstem

Medicinal Plants Used by Traditional Practitioners in Two Selected Barangays of Iligan City: Basis for Crafting an Educational Pamphlet

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Received: 3 Sep 2024 Revised: 29 Oct 2024 Accepted: 31 Oct 2024

Abstract

Traditional practitioners use their conventional knowledge to treat many diseases, and they use plants as the main source of medicine. However, a growing number of elderly practitioners are dying without their knowledge with undocumented and it has not been successfully passed from generation to generation. Rural communities have admitted that their understanding of the herbal plant's population was less than that of the preceding generation. Leading the ethnomedicinal knowledge to deteriorate because of the poor to no medicinal knowledge of the younger generation. This study aims to assess the knowledge and the utilization of medicinal plants used by traditional practitioners in two selected barangays of Iligan City, Lanao del Norte. The purposive random sampling technique was used to identify traditional practitioners (*manghihilot/mananabang*). Thus eleven (11) traditional practitioners served as key informants of the study. The study used a descriptive survey approach. Furthermore, the number of documented medicinal plants is 54 species and their uses exhibited a promising profundity of the local traditional practitioners' knowledge of medicinal plants and their significance in treating ailments/diseases. 31 ailments/diseases are identified that it can cure, most of it was taken orally to alleviate the specified ailment/disease it can treat. This study has added more to the existing discoveries of relevant medicinal plant species as well as served as a survey to assert if the already recorded medicinal plants still exist today. This will be beneficial to the young generation to be knowledgeable about the medicinal plants in their natural form and administer them traditionally, and not just know about the medicinal plants in their capsule form.

Keywords: medicinal plants, traditional practitioners, utilization

1. Introduction

People have been using plants as medicine since the dawn of civilization. The oldest usage may be discovered in Babylonia around 1770 BC in the Hammurabi law and ancient Egypt around 1550 BC (WWF, 2021). The link between man and plants is important because plants influence every element of man's life by supplying a constant and unlimited supply of various resources such as food, textiles, timbers, colors, tools, and many more (Balangcod et. al., 2011). Since humans evolved, people practiced herbal medicine as an alternative healthcare system because it is affordable and locally available (Pal Shukla, 2003). Herbal remedies are considered the oldest forms of health care known to mankind on this earth. Prior to the development of modern medicine, the traditional systems of medicine that have evolved over the centuries within various communities, are still maintained as a great traditional knowledge base in herbal medicine (Mukherjee, 2006). Also, People around the world are always looking at the potential of plants as medicinal sources in curing various diseases (Fiscal, 2017). Moreover, plants have not only been useful as a remedy for different diseases that affect humans and animals but also as a good starting point for drug development (Ifeoma, 2013). This leads to many individuals utilizing plants as medicine based on years of experience. People learn to identify and use therapeutic herbs via trial and error.

Medicinal plants are now becoming more widely used by people all over the world (Morilla, 2019). Medicinal plants and their preparations have been utilized for various purposes, and for ages, humans have attempted to heal illnesses and alleviate symptoms using various plant extracts and formulations (Cowan, 1999). Published research is more focused on revealing the value and benefits claimed for therapeutic applications of medicinal plants in a variety of diseases, such as their safety, as well as their cost-effectiveness, and ease of access (Morilla, 2014). As a result, it tries to consider bringing natural herbal dietary supplements into the country as necessary to improve people's lives. In fact, within the past decade, herbal medicine has gained increasing importance, with both medical and economic implications.

In developing countries particularly, as much as 80 percent of the Indigenous population still depends on traditional systems of medicine and medicinal plants for healthcare (Bennerman et. al., 1983) (Azazieh, 2010). In recent years, study on ethnobotanical knowledge have risen globally, particularly in some regions of Europe, Asia, and Africa (Quisumbing, 1978). Records of this completed research are generally available. However, ethnobotanical papers from the Philippines are few, with some focused on well-known indigenous communities living in rural regions (Catublas, 2016). Indigenous peoples primarily have an indigenous medical system in which medicinal plants play an essential role, and these resources are typically considered part of the culture's traditional knowledge. This was then adapted not just by rural regions but also by knowledge and the use of herbal therapy may also be seen in urban areas (Catublas, 2016). Alternative systems of medicine are popular among developing countries where 70% of their population relies (Azazieh, 2010).

In connection, the Philippine Department of Health (DOH) began to acknowledge various herbal plants and released its "Traditional Health Program " in 1992, approving ten (10) medicinal plants that have shown valuable benefits in treating specific diseases. The DOH has certified ten (10) plants that have been clinically demonstrated to have therapeutic properties to cure various sorts of conditions: 1. Yerba Buena (*Mentha arvensis*), 2.Pansit-pansitan (*Peperomia pellucida*) , 3. Tsaang Gubat (*Carmona retusa*), 4. Sambong (*Blumea balsamifera*), 5. Niyog (*Quisqualis indica* L.), 6. Lagundi (*Negative Vitex*), 7. Bayabas (*Guajava species*), 8. Bawang (*Alluim sativum*), 9. Ampalaya (*Momordixa charantia*), and 10. Akapulko (*Senna alata*) (BFAD 2005; Galvez Tan 2014; Quisumbing 1978; TKDL 2015).

Furthermore, aside from the ten herbal plants certified by the DOH, the Philippines has a diversified flora, with around 1,500 of over 13,000 species with documented medical potential, and some of these herbs were most likely used by certain individuals in rural communities (lam and Enriquez, 2013). That is why, the use of medicinal plants or herbs has grown in popularity in the Philippines in recent years as more clinical evidence emerges to validate that many of the old-age alternative medicines used by Filipinos have/have been passed down from generation to generation (Baleta et.al.,2016). However, ethnologists nowadays are still looking for more emerging herbal medicines. Even with improved technology, it appears that the healer's pouch remains one of the greatest sources for identifying plant species to test. Traditional healers are using their conventional knowledge to treat many diseases, and they use plants as the main source of medicine (Patil, 2012). Furthermore, rural folks and traditional healers or practitioners should also be considered and can be an important source of information about the use of alternative medicine (Prigge, 2005).

Despite this surge in enthusiasm for herbal treatment, a growing number of elderly healers are dying with their knowledge undocumented (Pal & Shukla, 2003). Also, the common knowledge of medicinal plants in different societies is fast disappearing because of the introduction of modern and up-to-date technologies and changes in traditional culture (Ganesan et. al. 2004). In some rural and urban communities today, issues in the increasing loss of plant biodiversity and genetic resources, lead to the resulting loss of ethnobotanical knowledge (Morilla et.al.,2014). Few members of the community have admitted that their understanding of the herbal plant's population was less than that of the preceding generation. This sort of demonstrates that Indigenous knowledge of medicinal plants is rapidly dwindling as more plants are lost, as also its understanding of their importance to humans (Olowa et.al.,2012). This was asserted by Ong et. al. (2014) who stated that in some places of the world like the Philippines, the ethnomedicinal knowledge is deteriorating because of poor medicinal knowledge of the younger generation. This just proved that as cultures evolve, the younger generation is progressively brought into mainstream society via formal education and exposure to popular media. With this exposure, there is an increased chance that oral ethnobotanical knowledge will not be passed down to future generations. Also, the new generation is observed to not be interested in carrying the old tradition, the disappearance of traditional knowledge is in danger and the number of traditional healers is decreasing in number (Rajadurai, 2004). Before the traditional knowledge dies it is important and necessary to document the importance of medicinal plants. If addressed abruptly, this would greatly contribute to the attainment of the United Nation’s Sustainable Development Goals of 2030, such as Goal 3 (Good Health and Well-being) and Goal 15 (Life on Earth).

The study aims to 1) assess the knowledge or information of medicinal plants used by traditional healers in Iligan City, Lanao del Norte, 2) assess the medicinal plants that can be found in Iligan City, Lanao del Norte, 3) utilization of medicinal plants used by traditional healers in Iligan City, Lanao del Norte. This study is also a basis for developing an educational pamphlet for students and community people to learn more about medicinal plants and their application in treating ailments/diseases.

2. Significance of the Study

This study provides basic information about the medicinal plants used by traditional practitioners (Manghihilot/Mananabang) in Iligan City, Lanao del Norte. Through this research, the traditional knowledge of traditional healers on medicinal plants will be documented and this will transfer to the scientific community of the world to discover and develop new and better drugs for the benefit of human beings. Moreover, this study will be a guide for crafting an educational pamphlet that will be used in teaching and learning about Herbal Plants. This will engage students to delve into the uses and benefits of herbal plants and to know more about the new and existing herbal plants in the locality.

3. Research Method

The study used a descriptive survey approach to provide basic information about the medicinal plants used by traditional practitioners (Manghihilot/Mananabang) in Iligan City, Lanao del Norte. The study was conducted in two selected barangays of Iligan City, Lanao del Norte.

3.1 Samples

The purposive random sampling technique was used to identify traditional practitioners (*manghihilot/mananabang*). Thus eleven (11) traditional practitioners served as key informants of the study.

3.2 Data collection

Before gathering data, the researcher sought permission first from the Barangay Captain or some local administrator before conducting the study. The respondents was asked a series of questions related to the medicinal plants they knew, their effectiveness, and uses through a semi-structured questionnaire. The questionnaire is adapted and modified from the study of Rainer Fiscal entitled "Ethnomedical Plants Used by Traditional Healers in Laguna, Philippines". The data obtained included medicinal plants with their local name, parts of the plants being used, ailment/disease treated, the mode of preparation, route of administration, and the person who can be treated.

Adapted from the study of Agapin (2020) Medicinal Plants Used by "*Traditional Healers in Pagadian City, Zamboanga del Sur, Philippines*", the study employs a uniform description of the methods of preparation, the following terms were used:

- Decoction - boiling of plant samples to extract active ingredients.
- Poultice - applying plants directly to the affected area.
- Concoction - mixing plants.
- Infusion - soaking of plants in a liquid to extract active ingredients.
- pounding/crushing/pulverizing plants to extract active components.
- steaming to vaporize volatile components.
- squeezing for the extraction of active compounds.

3.3 Data Analysis

In this study, Graphical presentations of data were made based on the percentage of responses to each question and Relative Frequency was used as a statistical tool in getting frequency distribution and percentage of the plant part used, ailments/diseases treated. mode of preparation, and route of administration. Where Relative frequency (RF) was the rate of reoccurrence.

$$RF = \frac{Frequency}{Total\ Frequency}\ x\ 100\%$$

4. Results and Discussion

Table 1 Demographic Profile of the Traditional Practitioners

Traditional Practitioners	Variable	Frequency	Percentage
Age	61-75	2	18.18%
	46-60	7	63.63%
	30-45	2	18.18%
Sex	Male	2	18.18%
	Female	9	81.81%
Civil status	Single	3	27.27%
	Married	8	72.72%

Table 1 above shows the demographic profile of the respondents. A total of 11 traditional practitioners from two selected barangays of Iligan City, Lanao del Norte. The respondents of the study are residents of Iligan City, 18.18% (2) were male and 81.81% were female. The traditional practitioners' age was between 30 - 75 years old and most of them were 46-60 years old. In addition, the table shows that out of 11 traditional practitioners, 27.27% (3) are single and 72.72% are married. This data shows that most of the identified traditional practitioners are female, married and with the age range of 46-60 years old this just asserts that even with improved technology, it appears that the healer's pouch remains one of the greatest sources for identifying plant species to test. Traditional healers use their conventional knowledge to treat many diseases, and they use plants as the main source of medicine (Patil, 2012).

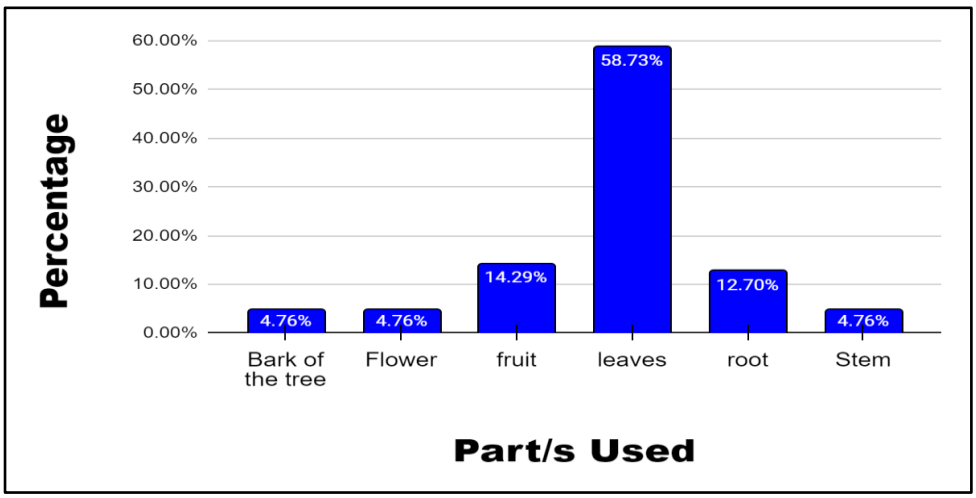

Figure 2. Plant Part/s Utilized for Remedies of the Ailments/Diseases

Figure 2 above illustrates the parts of the herbal plants that are utilized by traditional practitioners in remediating ailments/diseases. Based on the figure, the five parts of the plants utilized are the bark of the tree, flower, fruit, leaves, root, and stem. Wherein the leaves were the most used part of the plant with 58.73% followed by the plant's fruit (14.29%) and root (12.70%). Then the bark of the tree, flower, and stem with 4.76% utilization. Based on the result, identified herbal plants, leaves were the most available and more accessible part to collect than the other parts of the plant, thus it just makes sense that it is the most frequently utilized part as the main ingredient for most herbal preparation. According to Morilla and Demayo (2019), one explanation is that leaves are the simplest to harvest and keep the plant's completeness since they are quickly regenerated, unlike other parts such as stems and roots. Still, leaves are not the only important and beneficial part of the plant. Stem, roots, and the bark of the tree/plants also show a promising impact and utilization as well as highly affect the plant's survival and ecological aspects as stated by (Minh, 2014). Also, Morilla & Demayo (2019) reported similar findings on the high frequency of plant leaf usage. This is because leaves produce chemical compounds and contain secondary metabolites which are found mostly in plant leaf-like alkaloids, terpenoids, phenols, and flavonoids. These metabolites possess therapeutic properties that have been considered for their health benefits and potential components for medicinal drug development stressed by Wink (2015).

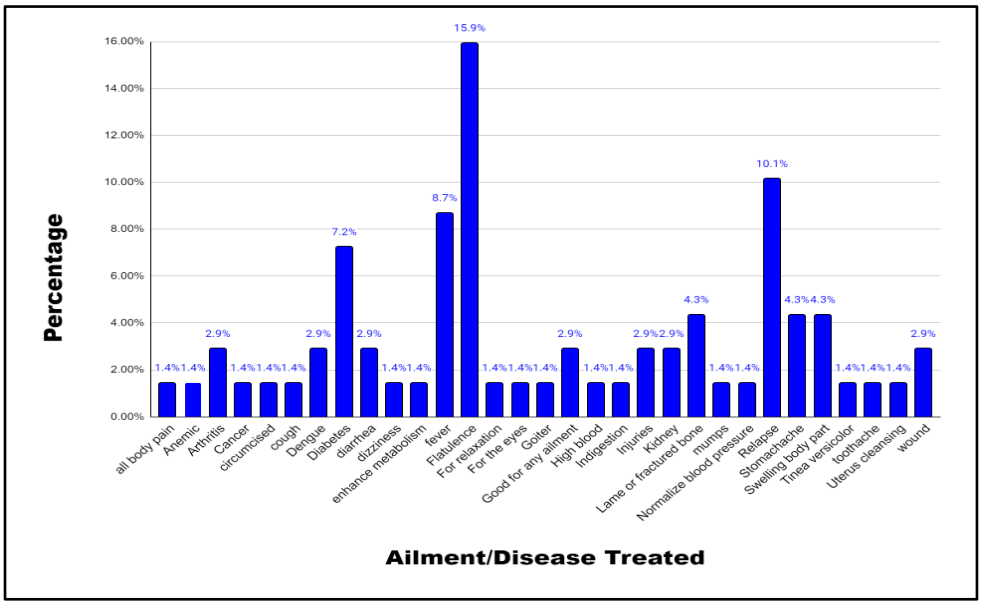

Figure 3. Ailments Treated by Medicinal Plants

Based on the findings Figure 3, presents the list of ailments/diseases treated along with their respective percentage. The identified medicinal plants are mostly used for treating internal and external ailments, the researcher acquired 31 ailments/diseases mentioned in this study. Partly these findings assert Cowan (1999) claim that medicinal plants and their preparations have been utilized for various purposes, and ages. Also, humans have attempted to heal illnesses and alleviate symptoms using several plant extracts and formulations. The most frequently mentioned ailments by the respondents in the findings are Flatulence (15.49%), Fever (8.70%), and Relapse (10.14%). This may suggest that these ailments are prevalent in the ailments treated by traditional practitioners. The high frequency of Flatulence indicates its significant impact on individuals seeking old medicinal remedies rather than relying on artificial medicines. According to Singh et al. (2020), studies have shown that various medicinal plants and their modes of preparation

are often used to alleviate digestive problems, including flatulence. With the weather and climate change we're experiencing, fever in children and adults is rampantly experienced. With a substantial frequency dedicated to treating fever, it just concludes how traditional practices globally were widely discovered. As pointed out by Akram et al., (2018) herb like Andrographis paniculata is utilized for their antipyretic properties that alleviate fever. Relapse is one of the common ailments dealt with by traditional practitioners and most of the patients they treat are adults. Treatment for relapse is said to indicate a recurring health concern. Gyawali et al. (2021) suggested that this may show the need for more effective long-term management strategies. A few of the ailments mentioned, such as Cancer, Diabetes, Goiter, and Dengue have a lower frequency but are still notable due to their severe health implications. This just asserts that in these ailments few medicinal plants were used in treating it. Although traditional remedies for these ailments are acknowledged and used, due to their severe health implications it is advised to complement them with modern medical treatments as stressed by Hussain et al. (2020). In addition, the identified medicinal plants are greatly used in treating external body issues, like Arthritis, injuries, lame or fractured bone, mumps, swelling body parts, tinea versicolor, and wounds. The diversity of ailments treated using the identified medicinal plants reflects the multifaceted approach that traditional practitioners administered taking into account extending their knowledge and utilization to address both simple and complex health issues. This proves that traditional practitioners often emphasize holistic approaches that underscore physical and mental well-being (Pfeiffer & Butz, 2005). Moreover, these findings provide a wide array of ailments addressed through traditional remedies mentioned by traditional practitioners. This shows the continued relevance of medicinal plants in healthcare practices. Furthermore, WHO (2020) highlighted that integrating traditional knowledge with evidence-based medicine could enhance healthcare, especially in regions where access to modern medicine and medical facilities may be limited or unavailable.

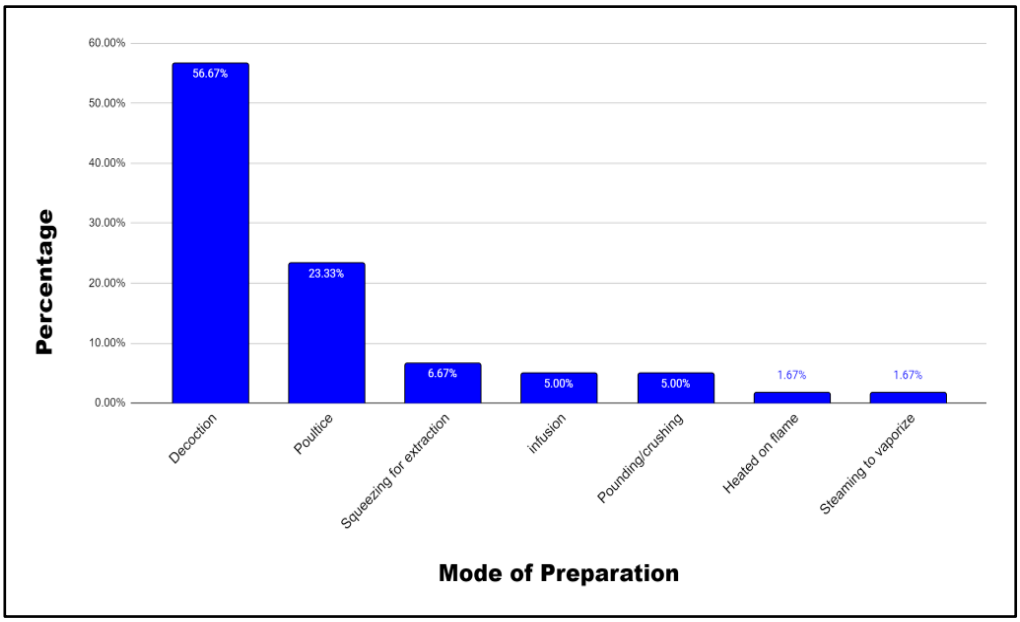

Figure 4. Mode of Preparation Done by Traditional Practitioners

Figure 4 provides the different types of modes utilized in preparing for the medicinal plants before it is taken or administered to the person to be treated. Based on the findings, it reveals that Decoction is the most used mode in preparation, compromising 56.67%. This just suggests that decoction might be considered effective. As discussed by ICS-UNIDO (2008) decoction is a process in which a specific part/s of the plant is boiled in a specified volume of water for a defined period, let it cooled, and strained. This procedure is suitable for extracting water-soluble and heat-stable constituents. Which is very effective in extracting medicinal compounds polysaccharides, alkaloids, and some phenolic compounds that have therapeutic benefits (Yang et al., 2018).. Other than this, Poultice was also one of the processes with a percentage of 23.22. According to studies, poultice is a process that can provide direct contact with active compounds, promoting effective healing and reducing inflammation (Xie et al., 2020). This indicates that it is a significant process but a less commonly used method compared to decoction. Another method in preparation used with lower percentages is squeezing for extraction (6.67%), Infusion (5%), Pounding/crushing (5%), Heated on flame (1.67%), and steaming to vaporize or submerge in lukewarm water (1.67%). Heating on flame and steaming to vaporize are less common methods. According to Chen et al., (2021), these methods are used for specific plants or cultural practices to extract volatile compounds or prepare specific types of medicinal plants. Furthermore, this low percentage for these methods may suggest that they are either less preferred or less applicable to the medicinal plants that are identified by traditional practitioners. These findings will be beneficial in broadening the knowledge of the different preparation methods, providing a comprehensive analysis of their significance and implications.

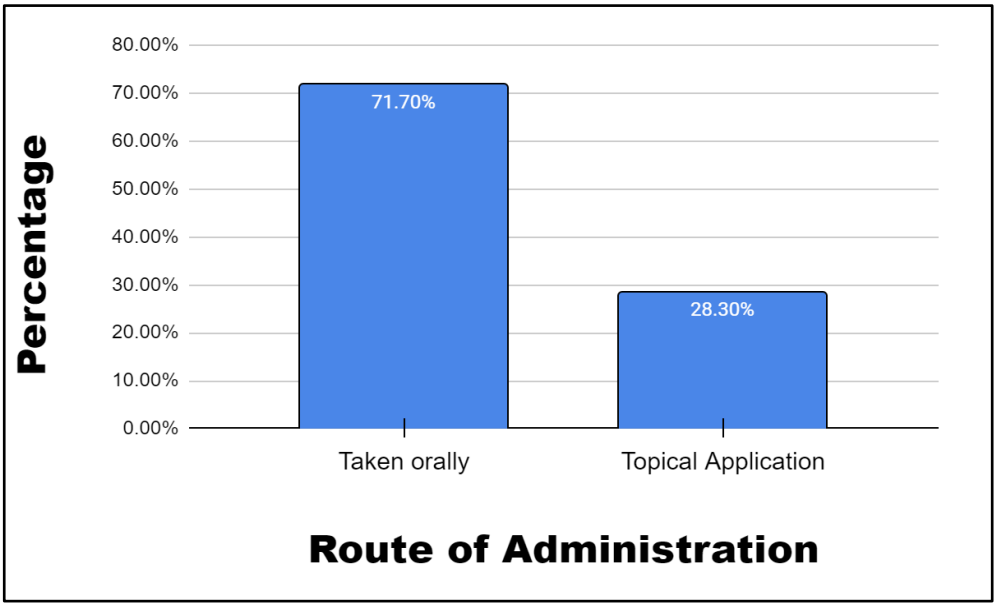

Figure 5. Route of Administration Done by Traditional Practitioners

Figure 5 shows the route of administration and its frequency in treatments through the use of medicinal plants. There are two types of administration, medicinal plants are taken orally or topical application after it is prepared. Based on the percentage majority of the treatments done for the ailments 71.70% are administered orally. This indicates that the used medicinal plants are safe to intake and traditional practitioners have a strong preference for this route in the administration of intervention. This finding aligns with the convenience of oral ingestion of medicinal plants, this is a common practice in traditional medicine as pointed out by Ekor (2014). He added that a high percentage of oral administration could be attributed to factors such as ease of indigestion, perceived effectiveness, and based on cultural preferences. Several studies have shown that administrating orally is preferred for its systemic effects and bioavailability of active compounds. 28.30% of the treatments done for the ailments are externally administered (topical application), this recommends that topical application is also done particularly in conditions that require direct application with affected areas, such as skin ailments or injuries (Trotter & Logan, 1986). These route of administration, the oral and topical routes reflects the efficacy perceived by the traditional practitioners not just them but also other users of traditional medicines. Some studies emphasize that based on the diverse traditional knowledge system, we have a variety of selections of administration routes, which often dictate us. Also selection of administration routes is based on the nature of the ailment and the desired therapeutic outcome (Heinrich et al., 2020).

Table 2 Medicinal Plants used by Traditional Practitioners in two Selected Barangays in Iligan City.

Local Name	Part/s Used	Ailment Treated	Mode of Preparation	Route of Administration	Person Treated
Kapayas	leaves	Fever Dengue	Pounding/ Crushing	Taken orally	All
Abana/Guyabano	leaves	Diabetes	Decoction	Taken orally	Person with diabetes
Avocado	leaves	Relapse	Decoction	Taken orally	All
Bayabas	leaves	Injuries Circumcised	Decoction	Topical application	All
Star Apple	fruit leaves	Diarrhea	Decoction	Taken orally	All
Balingbing	leaves	Fever	Decoction	Taken orally	All

Table 2: (Cont')

Local Name	Part/s Used	Ailment Treated	Mode of Preparation	Route of Administration	Person Treated
Tugas	bark of the tree	Relapse	Decoction	Taken orally	Adult
	leaves				
Buyongon	leaves	Flatulence	Decoction	Taken orally	Adult
Hilbas	leaves	Flatulence	Decoction	Taken orally	Adult
Amo-mo-on	leaves	Flatulence	Decoction	Taken orally	Adult
Miracle Tree	leaves	Diabetes	Decoction	Taken orally	Adult
		Stomachache			
Serpentina	leaves	Stomachache	Decoction	Taken orally	All
Mansinitas	leaves	Diarrhea	Decoction	Taken orally	All
Gabon (Sambong)	leaves	Relapse	Decoction	Taken orally,	All
		Kidney			Person with kidney problem
		Injuries	Heated on flame	Topical Application	All
		Flatulence			
Dulaw	fruit	Good for any ailment	Decoction	Taken orally	All
Luy-a	fruit	Flatulence	Decoction	Taken orally	All
Gumamela	flower	Swelling body part	Pounding/crushing	Topical orally	All
Cresantenum	flower	Flatulence	Poultice	Topical Application	All
		For relaxation			

Table 2: (Cont')

Local Name	Part/s Used	Ailment Treated	Mode of Preparation	Route of Administration	Person Treated
Tuba-tuba	stem leaves	Flatulence	Poultice	Topical Application	All
Malunggay	leaves	Good for any ailment	Decoction Squeezing for extraction	Taken orally or Topical application	All
Okra	fruit	Arthritis	Decoction	Taken orally	All
Saluyot	leaves	Arthritis	Decoction	Taken orally	All
Ampalaya	fruit	Diabetes	Infusion	Taken orally	All
Pipino	fruit	For the eyes	Poultice	Topical application	Adult
Panyawan	stem	Diabetes	Decoction	Taken orally	Person with diabetes
		Toothache	Infusion	Taken orally	toothache
	root	Wound	Poultice	Topical application	Wounded person
Bila-bila	leaves root	all body pain	Decoction	Taken orally	All
Mayana	leaves	Swelling body part	Pounding/Crushing	Topical appilication	All
Katakataka/ Handilika	leaves	Mumps	poultice	Topical application	All
Mansanitas	leaves	Indigestion	Decoction	Taken orally	Child

Table 2: (Cont')

Local Name	Part/s Used	Ailment Treated	Mode of Preparation	Route of Administration	Person Treated
Gmelina	leaves	Lame or fractured bone	Steaming to vaporize	Topical application	All
Asunting	leaves	Tinea versicolor	Pounding/Crushing	Topical application	All
Salabat	fruit	Flatulence	Infusion	Taken orally	Adult
Sinaw-sinaw	leaves	Kidney	Poultice	Taken orally	Adult
Tawa-tawa	leaves root	Fever	Decoction	Taken orally	All
Atis	leaves	Lame or fractured bone	Poultice	Topical application	All
Kalabo	leaves	Cough	Decoction	Taken orally	Child
Tanglad	leaves	Normalize blood pressure	Squeezing for Extraction	Taken orally	Adult
Elepante	root	Relapse	Decoction	Taken orally	All
Makahiya	root	Goiter	Decoction	Taken orally	Person with Goiter
Paragis	leaves root	Uterus cleansing	Decoction	Taken orally	Women
Alingatong	root	Diabetes	Decoction	Taken orally	Person with diabetes
Boyo	leaves	Swelling body part Fever	Poultice	Topical application	All

Table 2: (Cont')

Local Name	Part/s Used	Ailment Treated	Mode of Preparation	Route of Administration	Person Treated
Goto cola	leaves	High blood	Decoction	Taken orally	Person with highblood pressure
Noni fruit	fruit	Cancer	Squeezing for extraction	Taken orally	All
		Enhance metabolism			
Gabi	stem	Wound	Poultice	Topical application	All
Roselle plant	flower	Dengue	Squeezing for extraction	Taken orally	All
Alagaw	leaves	Fever	Poultice	Taken orally	
Kasoy tree	fruit	Flatulence	Decoction	Topical application	All
		Stomachache	Poultice	Taken orally	
Tuba-tuba	leaves	flatulence	Poultice	Taken orally	All
		Fever		Topical application	
Balete	root	Lame or fractured bone	Decoction	Taken orally	All
	bark of the tree	Relapse	Poultice	Topical application	
Galay/Kamote tops	leaves	Anemic	Decoction	Taken orally	All
		Dizziness			

Table 2: (Cont')

Local Name	Part/s Used	Ailment Treated	Mode of Preparation	Route of Administration	Person Treated
Achete	leaves	Flatulence	Poultice	Topical application	All
Dul-dol	bark of the tree	Relapse	Decoction	Taken orally	Adult
Lagnub	leaves	Relapse	Decoction	Taken orally	Adult

Based on the acquired data, table 2 shows the 54 medicinal plant species stipulated by traditional practitioners. Seven (7) out of the fifty-five (55) identified medicinal plants were commonly used, these are the following; 1) Bayabas (Guava), its leaves are used to treat injuries and circumcise. Any person can be treated; 2) Hilbas (Mugwort), its leave is used to cure Flatulence or any gas form in the stomach. This can be taken orally by any type of person; 3) Gabon o Sambong (Blumea balsamifera), its leave is used to cure several ailments such as relapse, injuries, flatulence, and kidney problems. This can be administered to all types of people, especially persons with kidney problems; 4) Kalamungay (Moringa), its leave is beneficial to all ailments and can be used/applied by any person, whether administered orally or externally; 5) Panyawan (Makabuhay Plant), it's stem is used to cure diabetes, toothache, and wound; 6) Paragis, it's used for uterus cleansing and all type of body pain, this can be administered to anyone, especially women; and 7) Balete, it is used to cure lame or fractured bones and relapse. Other identified medicinal plants are specified in Table 2 above.

Table 3 shows the mixed plants that traditional practitioners utilized and recommended to be used in treating specific ailments. Some plants were administered as mixtures with other plants to enhance the effectiveness of herbal medication. For instance, tawa-tawa (*Euphorbia hirta*), tuba-tuba (Kalsa), and Abana (Guyabano) are mixed to cure ailments such as dengue and UTI. To cure lame or fractured bone and flatulence a mix of Hilbas, Tuba-tuba (Kalsa), and luy-a (Ginger) is administered. It needs to be crushed or heated in a flame and applied externally. For stomachaches, the leaves of Bayabas and Achete are used and taken orally. Traditional practitioners also suggest that a mix of Gabon o Sambong and Guava is used to cure Flatulence. These specified mixed medicinal plants can be taken or applied to anyone. However, Agapin (2020) stresses that the synergistic act of combining medical plants is not further established before claiming its effectiveness. Also, no evident studies that can assert its claims and effectiveness.

Table 3 Mixed Plants for Herbal Medication Used by Traditional Practitioners.

Local Name	Part/s Used	Ailment Treated	Mode of Preparation	Route of Administration	Person Treated
Tawa-tawa + *Alagaw* + *Guyabano*	Leaves and Stem	Dengue and UTI	Concoction/ decoction	Taken orally or Topical Application	Adults
Hilbas + *Tuba-tuba* + *Luy-a*	Leaves and roots	Lame or fractured bone and flatulence	Crushing/ heat on flame	Topical application	All
Bayabas + *achete*	leaves	Stomachache	Decoction	Taken orally	All
Gabon + *Bayabas*	Leaves and roots	Flatulence	Decoction	Taken orally	All

5. Conclusion

The findings show that traditional practitioners still exist –administering traditional healthcare systems using various medicinal plants which are visible in two selected barangays in Iligan City, Lanao del Norte. The number of documented medicinal plants is 54 species and their uses exhibited a promising profundity of the local traditional practitioners' knowledge of medicinal plants and their significance in treating ailments/diseases. Additionally, traditional practitioners show that medicinal plants were highly utilized using every part of it. This just proved that medicinal plants are very purposeful and should not be wasted. Although the leaf is frequently used part because of its easy obtain and decoction was the most popular method of preparation. Moreover, with the 54 documented species of medicinal plants, 31 ailments/diseases are identified that it can cure. However, some of the identified diseases are quite severe thus the medicinal plant it needs to be accompanied by modern medical treatments, for diseases such as Cancer, Diabetes, Goiter, and Dengue. Furthermore, with the documented medicinal plants most of it, was taken orally to alleviate the specified ailment/disease it can treat. This study has added more to the existing discoveries of relevant medicinal plant species as well as served as a survey to assert if the already recorded medicinal plants still exist today. This will be beneficial to the young generation to be knowledgeable about the medicinal plants in their natural form and administer them traditionally, and not just know about the medicinal plants in their capsule form.

6. Recommendation

Some of the documented medicinal plants are been developed into capsules and supplements, but there are still a promising number of medicinal plants that are not yet deeply explored. Therefore, the findings of this research will act as a basis for the prominent medicinal plants that need to undergo assessment and further research on their benefits, and value especially on biodiversity. Additionally, the study will raise awareness of the need to protect medicinal plants, especially those medicinal plants that are slowly disappearing. Educators may use this information to develop an educational pamphlet as a supplementary tool to raise awareness among students about the importance of medicinal plants and their benefits to healthcare. This may also be used by DOH and DENR in crafting a pamphlet and for them to conduct a program educating young members of the communities/barangays. This will answer the dilemma of the medicinal plants are not effectively passed down from generation to generation.

Based on the findings of this study, the following recommendations are proposed for further study and policy. 1) Efforts should be intensified to document and preserve the traditional knowledge of medicinal plants held by local practitioners. This can be achieved through collaboration with local communities, academic institutions, and government agencies to create comprehensive records that safeguard this valuable cultural heritage. 2) Awareness and Education Programs, develop educational programs to raise awareness among younger generations about the importance of medicinal plants in their natural form. Schools and community-based initiatives should integrate lessons on traditional healthcare systems to ensure this knowledge is passed on and not overshadowed by modern pharmaceutical alternatives. 3) Promotion of Sustainable Practices, encourage sustainable harvesting and cultivation of medicinal plants to ensure their availability for future generations. This includes educating practitioners and communities about the risks of overharvesting and the importance of conservation efforts to protect biodiversity. 4) Integration with Modern Medicine, given that some diseases, such as Cancer, Diabetes, Goiter, and Dengue, require a combination of traditional and modern medical treatments, partnerships between traditional practitioners and healthcare providers should be fostered. This can ensure a more holistic and effective approach to treatment. 5) Further Research, conduct further research to evaluate the efficacy, safety, and pharmacological properties of the 54 documented medicinal plants. This could involve laboratory testing and clinical trials to substantiate their therapeutic uses and potentially integrate them into evidence-based healthcare practices. 6) Policy Support, advocate for policies that support traditional practitioners and the integration of traditional knowledge into healthcare systems. This includes funding for research, training, and capacity-building for practitioners, as well as legal frameworks to protect intellectual property rights over traditional knowledge. 7) Community Engagement, promote collaboration between local communities and researchers to ensure that traditional knowledge is respected, accurately represented, and used in ways that benefit the community. This participatory approach will enhance trust and encourage greater sharing of traditional healthcare practices. By implementing these recommendations, the significant knowledge and practices surrounding medicinal plants can be preserved, utilized responsibly, and integrated into modern healthcare for the benefit of current and future generations.

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