

## LEVEL OF KNOWLEDGE AND PRACTICES ON THE USE OF HERBAL PLANTS AMONG THE RESIDENTS IN PIEZA, VILLAVERDE, NUEVA VIZCAYA

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### ABSTRACT

Globally, herbal plants continue to play a vital role in healthcare practices, particularly in developing countries like the Philippines, where approximately 80% of the population relies on herbal remedies to treat ailments. Although herbal plants have a cultural significance and are widely used, the Department of Health (DOH) has officially approved only ten herbal plants for medicinal use, raising concerns about the safety and efficacy of unregulated practices. This study examines the knowledge and practices regarding the use of herbal plants among residents of Barangay Pieza, Villaverde, Nueva Vizcaya. Through a quantitative descriptive design, data were collected from 318 adult residents. Using a validated survey instrument that assessed knowledge, practices, and the use of both DOH-approved and non-approved herbal plants, the findings identified knowledge gaps regarding the ten DOH-approved herbal plants and potentially unsafe practices, which guided the development of an Information, Education, and Communication (IEC) material. Findings show that respondents were knowledgeable about commonly used plants such as *bayabas*, *lagundi*, and *bawang*, but not knowledgeable about *niyog-niyogan* and *tsaang gubat*. Leaves were the most commonly used plant part, primarily prepared as decoctions and taken orally for ailments such as cough, colds, and fever. Practicing self-medication was common among respondents, and most of them acknowledged the importance of informing healthcare professionals. Non-approved plants frequently used included tawa-tawa, goosegrass, lemongrass, guyabano leaves, malunggay leaves, turmeric, ginger, oregano, and aloe vera, reflecting reliance on familiar and locally available resources. This study highlights the importance of community education in promoting the safe and effective use of 10 DOH-approved herbal plants, with the aim of integrating these practices into evidence-based healthcare systems.

*Keywords:* Community health education, DOH-approved herbal plants, healthcare practices, health remedy, IEC material

### INTRODUCTION

Despite advances in healthcare enabled by science and technology, the use of herbal plants remains an essential component of the healthcare system due to their effectiveness, fewer adverse effects, and cultural importance. Herbal remedies remain embedded in everyday care in the Philippines, even as modern health services expand. The World Health Organization estimates that a large share of people worldwide continues to rely on traditional practices. According to Jones (2021), the misconception regarding herbal remedies causes adverse effects in individuals who use herbal plants as self-medication without proper guidance. Also, Smith et al. (2019) found that only 25% of participants in their study were aware of the proper use of herbal plants, while the rest used them without proper knowledge or formal education about their effects. They further emphasized that individuals should learn more about the 10 herbal plants approved by the Department of Health (DOH), including their proper use, preparation, and dosage. Thus, the researchers aimed to evaluate the respondents' knowledge and practices regarding the use of herbal plants, providing appropriate information and education on their safe and effective use to prevent potential harm.

Despite the Department of Health (DOH) approving only ten herbal plants for therapeutic use, many community residents continue to rely on a broader range of botanicals,

often without formal guidance on preparation, dosage, or potential drug-herb interactions. Previous studies have emphasized the risks associated with misconceptions and self-medication without professional consultation, particularly in areas with limited access to healthcare facilities (Jones, 2021; Zaidi et al., 2022). Dapar et al. (2020) reported that more than 1,500 herbal plants are used in the Philippines to address various health conditions. Similarly, Tolentino et al. (2019) found that numerous herbal plants are readily available within communities and are commonly regarded as natural remedies due to their perceived effectiveness and medicinal properties. However, proper knowledge and consultation with healthcare professionals are crucial to ensure their safe and effective use. Tolentino et al. (2019) further noted that while most respondents were familiar with non-approved herbal plants, many were unaware of some DOH-approved herbs—such as *niyog-niyogan* and *pansit-pansitan (ulasimang bato)*—including their proper preparation methods and the risks associated with incorrect usage and dosage.

Kretchy et al. (2021) stated that herbal plants are beneficial in managing health conditions, leading users to recommend them to others and reuse them when necessary. Wanjohi (2020) explained that the knowledge about herbal plant use originates from traditional knowledge passed down through households, communities, or ethnic groups and is deeply rooted in cultural practice. Various herbal plants are readily available in communities and are regarded as natural remedies due to their effectiveness and medicinal properties, offering multiple health benefits.

The municipality would also benefit from the study by learning that people in its area use herbal plants. They may help the community meet its medical needs. Aside from that, healthcare professionals, such as nurses, would also benefit from this study by gaining a better understanding of residents' local practices with herbal plants, enabling them to provide more informed and culturally sensitive care to their patients. Furthermore, the study will serve as a reference for future researchers who wish to conduct similar or related studies on the level of knowledge and practices regarding herbal plants. Lastly, for students, this study would help them understand the level of knowledge and practices of residents based on their profiles, as they would gain information about the herbal plants used in the community.

Thus, the primary purpose of this study was to generate baseline data on the level of knowledge and practices related to the use of herbal plants among the residents of Pieza, Villaverde. Guided by the objectives of the research, the study aimed to examine the residents' demographic profile, specifically their age, sex, marital status, and income, as well as to assess their knowledge of the herbal plants approved by the Department of Health (DOH), including the specific plant parts used, methods of preparation, modes of application, and intended uses. In addition, the study evaluated their actual practices in using herbal plants and identified the non-DOH-approved herbal plants commonly utilized within the community. By conducting a comprehensive analysis of these components, the study aimed to identify knowledge and practice gaps and to improve residents' quality of life by providing accurate, evidence-based information. The findings also serve as the basis for developing Information, Education, and Communication (IEC) materials that promote the safe and effective use of herbal plants, enabling residents to make informed and responsible health-related decisions.

## METHODOLOGY

A quantitative descriptive design was employed to measure knowledge and practices regarding herbal plants. The study was conducted in Barangay Pieza, Villaverde, Nueva Vizcaya—a rural, agriculture-based community where herbal remedies are commonplace and access to hospitals or clinics is limited. From a barangay population of 1,547 residents, a sample

of 318 adults (25–60 years old) was derived using Slovin's formula. Purposive sampling applied inclusion criteria that favored residents with knowledge and experience using herbal plants for ailments such as fever, stomachache, coughs/colds, diarrhea, skin conditions, hypertension, diabetes, asthma, dysentery, antihelminthic, antiedema, rheumatism, and antiurolithiatic indications; those aged  $\geq 61$  years or without any relevant knowledge/experience were excluded.

A 50-item, validated and reliability-checked questionnaire captured demographics; knowledge of the ten DOH-approved herbs, plant parts, preparation methods, modes of application, and specific uses; practices related to access, treatment behavior, and provider communication; and an open field for listing non-approved plants and perceived indications. Knowledge items used a four-point scale (very knowledgeable to not knowledgeable); practice items used a four-point frequency scale (always to never).

Data collection followed ethical safeguards with informed consent. Item means and standard deviations were computed; qualitative descriptions followed pre-specified mean-range interpretations for knowledge and practice. Findings guided the design of an IEC tarpaulin for community dissemination.

## RESULTS AND DISCUSSION

### Section 1. Demographic Profile of Respondents

Table 3. Demographic Profile

Profile Category	Groups	F (n=318)	%
Sex	Male	64	20.1
	Female	249	78.3
	No response	5	1.6
Age	24-34 y/o	88	27.7
	35-44 y/o	64	20.1
	45-54 y/o	98	30.8
	55-60 y/o	66	20.8
	No response	2	0.6
Marital Status	Single	80	25.2
	Married	189	59.4
	Separated	25	7.9
	Widowed	24	7.5
Income	Not Enough	65	20.4
	Enough	244	76.7
	More than Enough	9	2.8

The table outlines the demographic profile of the respondents based on gender, age, marital status, and income. In terms of gender, there were 64 (20.1%) males and 249 (78.3%) females. For age groups, 88 (27.7%) were aged 24 to 34 years old, 64 (20.1%) were aged 35 to 44 years old, 98 (30.8%) were aged 45 to 54 years old, and 66 (20.8%) were aged 55 to 60 years old. For marital status, 80 or 25.2% were single, 189 or 59.4% were married, 25 or 7.9% were separated, and 24 or 7.5% were widowed. In terms of income, 65 or 20.4% answered 'not enough', 244 or 76.6% answered 'enough income', and 9 or 2.8% answered 'more than enough'. Data show that married, financially stable women aged 45 to 54 possess knowledge and use herbal plants. Their caregiving roles, life experiences, and access to resources are likely to support the continued use of traditional herbal remedies.

Missing data on age and sex were attributed to respondents' refusal to disclose personal information due to privacy concerns. The remoteness of the study site further hindered follow-up data collection. While this constraint limited the scope and generalizability of

demographic analysis, all other questionnaire items were fully completed. The absence of age and sex information did not compromise the validity of the results on respondents' knowledge and practices, which remained robust based on the available data.

## Section 2. Level of Knowledge on the Use of Herbal Plants

Table 4. Level of Knowledge on Herbal Plants Approved by the DOH

Top 10 DOH-Approved Herbs	Mean	SD	QD
Acapulco	2.45	0.76	Slightly Knowledgeable
Ampalaya	3.19	0.69	Knowledgeable
Bayabas	3.49	0.53	Knowledgeable
Bawang	3.24	0.57	Knowledgeable
Lagundi	3.41	0.51	Knowledgeable
Niyog-niyogan	1.31	0.50	Not Knowledgeable
Tsaang Gubat	1.35	0.49	Not Knowledgeable
Sambong	2.42	0.60	Slightly Knowledgeable
Ulasimang Bato	2.21	0.63	Slightly Knowledgeable
Yerba Buena	1.91	0.88	Slightly Knowledgeable

Table 4 presents the respondents' level of knowledge regarding the use of the ten herbal plants approved by DOH. Based on the results, the respondents were generally knowledgeable of commonly used plants, with the following results: bayabas ( $M = 3.49$ ,  $SD = 0.53$ ), lagundi ( $M = 3.41$ ,  $SD = 0.51$ ), bawang ( $M = 3.24$ ,  $SD = 0.57$ ), and ampalaya ( $M = 3.19$ ,  $SD = 0.69$ ). These herbal plants received relatively high mean scores, suggesting consistent knowledge across the respondents. On the other hand, niyog-niyogan ( $M = 1.31$ ,  $SD = 0.50$ ) and tsaang gubat ( $M = 1.35$ ,  $SD = 0.49$ ) were the least recognized and used, indicating a significant potential knowledge gap from the former group of herbal plants. In the study by Tolentino et al. (2019), it was evident that their chosen respondents used herbal plants extensively.

In the Philippines, the use of herbal plants reflects the practices and economic conditions of a particular place. The chosen respondents mostly use bayabas, ampalaya, and lagundi to treat common ailments, reflecting both practice and the ready availability of these plants within their community. In contrast, ulasimang bato, pansit-pansitan, niyog-niyogan, and yerba buena are seldom used by the respondents because they are unavailable in their community. The unavailability of these herbal plants within the community is an external factor associated with low familiarity with certain DOH-approved herbal plants. These findings imply that the availability of herbal plants within the community influences knowledge of their utilization. Pieza respondents commonly use readily available herbal plants within the community, such as ampalaya, bayabas, bawang, and lagundi, resulting in knowledgeable and confident use of these herbal remedies for treating common ailments. This further suggests that community knowledge is reinforced through regular use, exposure, and healthcare practice. In contrast, the unavailability of some herbal plants within the community, such as the niyog-niyogan and tsaang gubat, results in low utilization in healthcare practice. This environmental limitation directly impacts the community's knowledge and capacity to recognize and incorporate these plants into common healthcare practices, leading to being slightly knowledgeable to not knowledgeable at all about these plants.

## Table 5

*Level of Knowledge on Plant Parts*

<b>Plant Parts</b>	<b>Mean</b>	<b>SD</b>	<b>QD</b>
Leaves	3.71	0.52	Very Knowledgeable
Fruits	1.98	0.83	Slightly Knowledgeable
Bulb	1.91	0.72	Slightly Knowledgeable
Flower	1.58	0.55	Slightly Knowledgeable
Seeds	1.47	0.62	Not Knowledgeable
Roots	1.51	0.66	Slightly Knowledgeable

Regarding the use of plant parts, the respondents are very knowledgeable about the use of leaves ( $M = 3.71$ ,  $SD = 0.52$ ) due to their abundance; they are easier to collect and can be generated faster than other parts. The respondents are not knowledgeable about the use of seeds ( $M = 1.47$ ,  $SD = 0.62$ ), suggesting a strong preference for leaf-based remedies. The studies of Cordero and Alejandro (2021) and Lindayao et al. (2024) support the above findings. The proficient use of bayabas and the preference for its leaves, gathered, cooked, and consumed by respondents, reflect strong traditional knowledge. However, this also highlights a gap in understanding the potential uses of other plant parts. While the leaves are widely recognized for their medicinal value, limited understanding of the benefits of the bark, roots, or fruits suggests that practical applications remain narrow. These findings imply that the Pieza residents are knowledgeable about the use of leaves. However, the use of flowers, roots, and fruits is limited, as their collection is discouraged to prevent damage to the plants, especially trees. To address this, the educational intervention should focus on promoting the use of plant parts such as leaves, which can provide similar medicinal benefits without harming the plant. Additionally, raising awareness of sustainable harvesting practices will help preserve medicinal plants for future use.

**Table 6***Level of Knowledge on the Method of Preparation*

<b>Method of Preparation</b>	<b>Mean</b>	<b>SD</b>	<b>QD</b>
Decoction (Pagpapakulo)	3.32	0.84	Knowledgeable
Infusion (Pagbuhos ng pinakuluang tubig sa dahon)	2.59	0.81	Knowledgeable
Poultice (Panapal o pantapal)	2.60	0.82	Knowledgeable
Compress (Pagpiga o pagdikdik)	3.05	0.69	Knowledgeable
Steam (Paglanghap)	1.99	0.96	Slightly Knowledgeable

As for the method of preparation, the respondents are knowledgeable about the decoction (pagpapakulo) method ( $M = 3.32$ ,  $SD = 0.84$ ). This was followed by compression (pag-piga) ( $M = 3.05$ ,  $SD = 0.69$ ) and infusion (Pagbuhos ng pinakuluang tubig sa dahon) ( $M = 2.59$ ,  $SD = 0.81$ ) preparations, for which respondents were also knowledgeable. The respondents are only slightly knowledgeable about the steam inhalation (paglanghap) method ( $M = 1.99$ ,  $SD = 0.96$ ). These results show a strong preference for the decoction of herbal plant parts as a means for extracting medicinal properties. This finding aligns with the studies of Tolentino et al. (2019) and Bersamin et al. (2021), which reported that decoction preparation is commonly used for bayabas leaves, lagundi, ampalaya leaves, sambong leaves, niyog-niyogan seeds, tsaang-gubat leaves, and ulasimang-bato seeds, indicating that communities are knowledgeable about how these herbal plants are prepared and used, consistent with the results gathered from the Pieza respondents. These findings imply that Pieza respondents are knowledgeable about the proper preparation of bayabas, lagundi, sambong, and ampalaya, but are only slightly knowledgeable about the preparations for akapulko, niyog-niyogan, and ulasimang-bato/pansit-pansitan. This

highlights the need for targeted health education interventions to raise knowledge about the proper method of preparing the Pieza respondents.

*Table 7. Level of Knowledge on Mode of Application*

<b>Mode of Application</b>	<b>Mean</b>	<b>SD</b>	<b>QD</b>
Directly apply to the affected area	3.20	0.69	Knowledgeable
Take it orally/ eaten	3.40	0.76	Knowledgeable
Wash it on the affected area	3.19	0.62	Knowledgeable
Massage on the affected area	2.76	0.66	Knowledgeable

The results show that of the Pieza respondents are knowledgeable about the use of herbal plants when taken orally (M = 3.40, SD = 0.76), when directly applied on the affected area (M=3.20, SD=0.69), when washing on the affected area (M=3.19, SD=0.62), and massaging the affected area (M = 2.76, SD = 0.66). Supporting this, the recent study by Benfodda et al. (2024) found that respondents in Haiti used various application methods when using herbal plants as health remedies, including oral consumption, topical application via direct massage, and washing. Their study also revealed that oral intake was the most commonly used method, as Haitian families often used decoctions consumed as tea, typically taken twice daily and up to three times a day during illnesses such as colds, coughs, or respiratory diseases like COVID-19. Edible herbal fruits or leaves were also consumed orally, with the belief that they could strengthen the immune system. Additionally, their findings showed that massaging with herbal preparations was rarely practiced, limited to alleviating body aches associated with severe flu. Another study by Maver et al. (2018) highlighted the benefits of guava leaves (bayabas) for enhancing the skin's natural healing process through washing, a method favored for its accessibility and perceived effectiveness due to anti-inflammatory and disinfectant properties that promote faster wound healing. These findings imply that the respondents are knowledgeable about the mode of application of herbal plants but still need health education on the proper method of application to strengthen safety and evidence-based information on herbal plants, as improper or unguided consumption may pose health risks, especially when combined with other medications.

**Table 8**

*Level of Knowledge on the Use of Herbal Plants*

<b>Use</b>	<b>Mean</b>	<b>SD</b>	<b>QD</b>
Fever	3.21	0.69	Knowledgeable
Stomachache	2.13	0.85	Slightly Knowledgeable
Cough and colds	3.22	0.73	Knowledgeable
Diarrhea	2.89	0.76	Knowledgeable
Washing wounds	3.46	0.73	Knowledgeable
Antifungal	2.72	0.94	Slightly Knowledgeable
Hypertension	2.84	0.91	Slightly Knowledgeable
Diabetes	2.93	0.62	Knowledgeable
Asthma	2.46	0.65	Slightly Knowledgeable
Dysentery	2.18	0.65	Slightly Knowledgeable
Skin Diseases	2.43	0.74	Slightly Knowledgeable
Anthelmintic	1.99	0.58	Slightly Knowledgeable
Antiedema	1.80	0.68	Slightly Knowledgeable
Rheumatism	2.17	0.79	Slightly Knowledgeable
Antiuro lithiatic	2.31	0.78	Slightly Knowledgeable

In terms of herbal plant usage, the results show that Pieza respondents were knowledgeable about the use of herbal plants for washing wounds (M = 3.46, SD = 0.73), cough and colds (M = 3.22, SD = 0.73), fever (M = 3.21, SD = 0.69), diabetes (M = 2.93, SD = 0.62), and diarrhea (M = 2.89, SD = 0.76). On the other hand, the Pieza respondents are slightly knowledgeable regarding the use of herbal plants for anthelmintic purposes (M = 1.99, SD =

0.58), antiedema ( $M = 1.80$ ,  $SD = 0.68$ ), and rheumatism ( $M = 2.17$ ,  $SD = 0.79$ ), which suggests the need for further awareness and education on the potential medicinal uses of herbal plants. The respondents' use of ten DOH-approved herbal plants is similar to the findings of Tolentino et al. (2019), where bayabas is used for washing wounds and treating diarrhea, lagundi is used for fever, cough, and colds, and bawang is used for treating hypertension. *Sambong* is used as an antiedema, and acapulco and niyog-yogan are used as antibacterial or anthelmintic remedies. Meanwhile, yerba buena is used in treating rheumatism. It was evident that the respondents mostly used bayabas, lagundi, ampalaya, and bawang to treat common ailments, while sambong, acapulco, niyog-yogan, and yerba-buena were seldom used. The level of knowledge could be relative to respondents' familiarity with, or what is most known to them, among the 10 approved herbal plants. Based on the tables, the participants' knowledge and practices were limited, as most of their responses indicated only a slight understanding. However, since these were not at the optimal level, there is still a need to work on enhancing them so that the community gains a deeper, more accurate understanding of the 10 approved herbal plants. These could be educational efforts, such as health seminars, school programs, and accessible informational materials to bridge the gap between traditional beliefs and scientific evidence. Collaborating with health experts and local practitioners can further ensure safe and informed use. Enhancing knowledge in this way promotes responsible use of herbal medicine and better health outcomes.

### Section 3. Level of Practice on the Use of Herbal Plants

Table 9. Level of Practice on the Use of Herbal Plants

Practice Item	Mean	SD	QD
Do you use an alternative to medicine?	3.46	0.63	Sometimes
If you exhibit symptoms of disease, do you self-medicate with herbs?	3.36	0.56	Sometimes
If you exhibit symptoms of disease, do you visit a physician?	3.03	0.85	Sometimes
If you exhibit symptoms of disease, do you go to an herbalist?	2.82	0.92	Sometimes
If you exhibit symptoms of disease, do you ask a friend or family member?	2.93	0.66	Sometimes
I prefer using herbs over seeing a physician because it is safer.	2.96	0.78	Sometimes
I prefer using herbs rather than seeing a physician because it is less expensive.	3.39	0.67	Sometimes
Did you receive any education about herbs?	2.81	0.77	Sometimes
Did the physician ask about using herbs?	2.98	0.68	Sometimes
Do you feel that it's important to tell your physician about the herbs you use?	3.28	0.74	Sometimes

As shown in Table 9, respondents "sometimes" engaged in various practices related to the use of herbal plants as alternatives to conventional medicine ( $M=3.46$ ,  $SD=0.63$ ), primarily because of their lower cost ( $M=3.39$ ,  $SD=0.67$ ). They sometimes practice self-medication ( $M=3.36$ ,  $SD=0.56$ ), consultation with herbalists ( $M=2.82$ ,  $SD=0.92$ ) or family members ( $M=2.93$ ,  $SD=0.66$ ), and communication with physicians about herbal usage ( $M=3.28$ ,  $SD=0.74$ ). The mean scores across all items ranged from 2.81 to 3.46, consistently falling within the qualitative description of "sometimes." A similar result was observed in the study by Alawiya et al. (2023), which found that the community in Masiu, Lanao del Sur, uses herbal plants as part of their healthcare practices and spiritual identity. Also, residents in Villaverde sometimes practiced self-medication, reported that their physicians sometimes asked about herbal use ( $M = 2.98$ ,  $SD = 0.68$ ), and sometimes believed it was important to inform healthcare professionals ( $M = 3.28$ ,  $SD = 0.74$ ). The researchers also noted that the residents in Villaverde rarely had formal education about herbs ( $M = 2.81$ ,  $SD = 0.77$ ) and sometimes communicated with healthcare professionals regarding herbal use. This suggests that while healthcare practices remain strong in both areas, there is a gap in formal knowledge and integration with modern healthcare systems in Villaverde, compared to Masiu, where informal education led by community figures

such as teachers and healers is more embedded. These findings imply that widespread and uncritical acceptance of herbal plants without understanding potential side effects or herb-drug interactions could pose health risks, especially when used alongside conventional medicines. Moreover, limited communication between herbal users and healthcare professionals in both studies may hinder safe and effective treatment, as emphasized by al-Nadaf and Awadallah (2020), who noted that failing to disclose herbal use could result in adverse interactions. Finally, the strong community-based education and belief systems present an opportunity for health interventions to integrate traditional and modern practices by collaborating with respected community members, such as faith healers and local educators. This approach can promote safer, more informed use of herbal plants while respecting and preserving their healthcare practices.

#### **Section 4. Non-Approved Herbal Plants by the Department of Health Used by the Residents of Pieza, Villaverde**

**Table 10**

*Non-Approved Herbal Plants by the DOH*

<b>Non-Approved Herbal Plants</b>	<b>Indication</b>	<b>Frequency</b>
Tawa-tawa	used for dengue fever and related symptoms, particularly to help raise platelet counts.	42
Goosegrass	to treat conditions like urinary tract infections, kidney stones, and respiratory problems.	7
Lemon grass	to reduce fever, muscle aches, and cleanse.	19
Guyabano leaves	relief from migraine pain, the elimination of harmful bacteria in the urinary tract, and the cure of cancer.	9
Malunggay leaves	help manage conditions such as asthma, edema, diabetes, aid wound healing, lower blood pressure, support anti-cancer treatment, and support milk production in mothers.	38
Turmeric	treat digestive and liver problems, skin diseases, and wounds.	24
Ginger	to treat joint pain, sore throats, and digestive issues.	17
Oregano	for coughs and respiratory ailments, for digestive issues, and for its antimicrobial and anti-inflammatory properties.	12
Aloe Vera	for burns, treating hair loss, and skin conditions.	6

After completing the survey, the researchers asked follow-up questions to determine whether respondents use plants other than the 10 approved by the Department of Health (DOH) and to identify their purposes. The Pieza respondents' answers were noted as part of their knowledge about the use of herbal plants. Practices regarding the use of herbal plants among the Pieza respondents showed that not all listed non-approved herbal plants were used, suggesting partial reporting of these remedies. A portion of them indicated that they received information from informal sources, such as friends, neighbors, and online platforms, particularly social media such as Facebook and YouTube. The data presented in the corresponding table reflect responses from the comment sections of the questionnaires, where some respondents provided additional information during the survey.

### **CONCLUSION AND RECOMMENDATIONS**

#### **Conclusion**

The study found that the majority of the residents of Barangay Pieza, Villaverde, who participated in the research were middle-aged, predominantly female, and mostly married. These characteristics reveal a notable relationship between demographic profile and the use of herbal plants, where traditional knowledge, caregiving roles, and practical health choices play

significant roles. Most of the Pieza respondents indicated that their income was sufficient to meet basic needs, suggesting that, despite having financial stability, they still use and practice herbal plants.

Regarding knowledge of herbal plants, the respondents are knowledgeable, particularly about commonly used plants such as bayabas, lagundi, and bawang. Conversely, the findings revealed that the respondents are not knowledgeable regarding *niyog-niyogan* and *tsaang gubat*. In terms of plant parts, leaves were most commonly used, and decoction was the preferred preparation method. For application, both oral and topical methods were utilized based on the condition being treated, with coughs, colds, fever, and wound care being the most commonly addressed ailments. The limited use of seeds, roots, and flowers further underscores a lack of knowledge about the full range of herbal plant benefits and preparation techniques.

In terms of practice, the data indicate that herbal plant use is integrated into the daily health routines of many residents, supported more by family or community knowledge than by formal training. As for the non-approved herbal plants used, residents rely on locally available, well-known plants, including *tawa-tawa*, goosegrass, lemon grass, *guyabano* leaves, *malunggay* leaves, turmeric, ginger, oregano, and *aloe vera*, reinforcing the role of familiarity and availability in their health practices.

An Information education communication (IEC) material was developed in the form of a tarpaulin which contains information about the proper use, preparation, method of application, and potential side effects of top 10 most commonly used herbal plants, approved by the Department of Health, among the respondents of Pieza, along with guidance on when to seek professional medical attention, which may contribute to enhancing their knowledge and sustaining their practice in the use of herbal plants.

## **Recommendations**

To support the safe and informed use of herbal plants, community-based learning activities should be implemented to educate residents on lesser-known plants, appropriate preparation methods, and potential risks. Health professionals should initiate discussions on herbal use during consultations to help prevent harmful interactions with prescribed medications. Collaborations between local healthcare providers and knowledgeable community herbal users are encouraged to promote a comprehensive approach to health, integrating both traditional and clinical perspectives.

Moreover, the crafted educational tarpaulin will also be distributed to Pieza public areas, such as Barangay Health Units and community halls, maximizing its visibility and impact through the initiative of barangay healthcare providers. Additionally, establishing community gardening activities in public spaces throughout the community can encourage residents to cultivate DOH-approved herbal plants, providing hands-on opportunities to learn proper cultivation, harvesting, and preparation techniques while strengthening community engagement. Regular health forums or barangay-based workshops can facilitate accurate information sharing and address common misconceptions, with particular emphasis on enhancing knowledge of less-utilized plants, their parts, and diverse preparation methods.

For future researchers, a retrospective study may be conducted among residents of Pieza to assess the impact of the educational tarpaulin displayed in public areas. Researchers may evaluate whether there are significant improvements in the knowledge and practices of Pieza residents regarding the use of DOH-approved herbal plants following exposure to the IEC material. This study provides a valuable foundation for further investigation into the medicinal and scientific aspects of herbal use. The researchers are encouraged to explore deeper into the

efficacy, safety, and pharmacological properties of lesser-known, locally used herbal plants in the community.

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