AVAILABILITY, PREPARATION AND USES OF HERBAL PLANTS IN KALINGA, PHILIPPINES

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Abstract

The study determined the level of awareness of the residents on the availability of the herbal plants; and level of knowledge on the preparation and uses of the herbal plants. It used the descriptive method of research with the questionnaire as main data gathering tool. Used the 3 point scale, weighted mean, and Chi-square (x^2) with 5% significant level as statistical treatment and analysis.

The residents were very aware of the availability of the (6) six herbal plants namely: *akapulko (Cassia, alata L), ampalaya (Momordica charantia), bawang (allium Sativum), bayabas Psidium guavida L, tsaang gubat Carmona retusa, and Yerba (hierba) Buena (Mentha cordifelia) ;* very knowledgeable on the preparation of the selected herbal plants by decoction and compression but only knowledgeable on the preparation by infusion; not knowledgeable on the uses of *akapulko* to cure cough, and as mouthwash and purgative; not knowledgeable on the anti-pyretic effect of ampalaya ; knowledgeable the uses of *bawang* ; and not knowledgeable on the use of *bayabas* to prevent nose bleeding. No significant relationship on the level of awareness on the availability, and knowledge on the preparation and uses of the selected herbal plants with the profile of the respondents were determined except ethnic origin.

Dissemination and information campaign on tsaang gubat and yerba Buena; conduct of trainings on the preparation of herbal plants by infusion; information on the use of akapulko to cure cough, and as mouthwash and purgative, ampalaya as an anti-pyretic, and bayabas to prevent nose bleeding; conduct of more parallel studies; and program on the production and dispersal of herbal plants were recommended.

Keywords: Herbal medicine, awareness, herbal product development, health care

Introduction

People in the province have long been using medicinal plants even before western pharmaceutical companies manufactured drugs from plants for the following reasons: first, these are widely available in the place; second, the various preparations made from these plants work for certain illnesses such as cough, fever, wounds or massaged to relieve the pain associated with osteoarthritis; third, they are cheaper than drugs manufactured by foreign pharmaceutical corporations.

In 1992, the Department of Health circulated a list of "Ten scientifically validated" Philippine herbal plants, which includes akapulco, ampalaya, bawang, bayabas, lagundi, niyug-niyogan, sambong, tsaang gubat, ulasimang bato, and yerba Buena. These herbal plants are used as alternative and first aid medicines among the Kalinga people.

The Six Herbal Plants Under Study

Figure I. ***Acapulco*** *(Cassia, alata L)*

Figure II. ***Ampalaya****(Momordica charantia)*

Figure III. ***Bawang or Garlic*** *(allium Sativum)*

Figure V. ***Tsaang gubat*** *(Carmona retusa*)

Figure IV. ***Bayabas or Guava*** *(Psidium guavida L)*

Figure VI. ***Yerba*** *(hierba)* ***Buena*** *(Mentha cordifelia)*

Significance of the study

The study is beneficial to community people for they will learn the medicinal value of herbal plants which can greatly help them financially especially that the herbal plants abound in the locality; Nurse educators, Rural Health Midwives who are partners of the community in promoting health nursing will be reinforced in their know-how on the preparation and uses of the herbal plants; and the education sector who serves as a medium for information and dissemination to learners about herbal plants will have instructional materials which can be perpetuated from generation to generation.

Objectives of the study

Determined the level of awareness on the availability and level of knowledge on the preparation, and uses of the selected herbal plants under study, namely: *Akapulko* (Ringworm bush), *Ampalaya* (Bitter gourd), *Bawang* (Garlic), *Bayabas* (Guava), *Tsaang Gubat* (Tea), and *Yerba Buena* (Peppermint)

Determined significant relationships on the awareness of the availability of the herbal plants, knowledge on the preparation, and uses to the respondents' profile of age, gender, civil status, educational attainment, ethnic origin, and occupation.

HYPOTHESIS: The level of awareness on the availability, and knowledge on the preparation and uses of the herbal plants are not significantly associated to the respondents' profile

Framework of the study

The study was anchored on two theories, the Thompsonianism Theory (Thompson, 1981) which stated that a disease is a result of a decrease derangement of the vital fluids, brought about by loss of animal heat. The resulting symptoms are interpreted as efforts of the vital force to get rid of the toxic encumbrances generated. The Physiomedicalism Theory came as the second major stream of thought in herbal medicine. Ultimately this new system of herbal medicine retained much of what had been accepted as fundamental in the Thompsonianism Theory. Thus, herbal function was thought of as aggregate expression of vital force, acting through cellular metabolism to maintain the functional integrity of the entire organism.

Methodology

Conduct of preliminary field visit/ Ocular survey
Interview
Use of Questionnaire
Data organizing and analysis
Result write up and reporting

Tretment of data and statistical analysis

The 3 point scale and Weighted Mean were used to quantify the responses. Significant relationship of the availability, preparation and use of the selected herbal plants to the respondents' profile were determined using the Chi-Square (x^2) with 5% significant level.

Results nad discussions

Awareness on the Availability of the Selected Herbal Plants

Table I. Level of Awareness on the Availability of the Selected Herbal Plants (n=50)

Herbal Plants	**Weighted Mean (Xw)**	**Descriptive Equivalent (DE)**
Akapulko	1.66	Moderately Aware
Ampalaya	2.78	Very Aware
Bawang	2.82	Very Aware
Bayabas	2.90	Very Aware
Tsaang Gubat	2.46	Moderately Aware
Yerba Buena	2.46	Moderately Aware

Legend: Statistical Limit — Description
2.50-3.00 — Very Aware (VA)
1.00-1.49 — Moderately Aware (MoA)
Not aware (NA)

The respondents were very aware on the availability of *bayabas* (2.90), *bawang* (2.82), and *ampalaya* (2.78). *Bayabas* is grown several years ago and it has been used by indigenous people because of its long history of medicinal uses. Bawang is likewise abundant in the area and commercially available throughout, while *Ampalaya* is a year-round vegetable, extensively cultivated in the Philippines. On the other hand, the respondents accepted that were moderately aware on the availability of Tsaang Gubat, Yerba Buena and *Akapulko. Akapulko* is found throughout the Philippines but mostly in areas at low and medium altitudes.

Level of Knowledge on the Preparation of the Selected Herbal Plants

Table II. Knowledge on the Preparation of Selected Herbal Plants (n=50)

Ways of Preparation	Weighted Mean	Descriptive Equivalent
Decoction	2.72	Very Knowledgeable
Infusion	2.38	Knowledgeable
Compression	2.68	Very Knowledgeable

Legend: Statistical Limits — Description
2.50-3.00 — Very Knowledgeable (VK)
1.50-2.49 — Knowledgeable (K)
1.00-1.49 — Not Knowledgeable (NK)

The respondents were very knowledgeable of decoction and compression as ways of preparing the herbal plants for use (2.72 and 2.68, respectively). Infusion, on the other hand had the lowest Mean of 2.38(knowledgeable). In support, the study of Co (1990) noted that people in the Cordilleras mostly use decoction rather than infusion as a means of preparation.

Level of Knowledge on the Uses of the Selected Herbal Plants

The respondents were not knowledgeable on the uses of akapulko to treat cough and as mouthwash, and purgative; not knowledgeable on the anti- pyretic effect of ***ampalaya;*** knowledgeable on the uses of bawang; not knowledgeable on the use of b***ayabas*** to stop bleeding; and were knowledgeable on the identified uses of ***Tsaang Gubat and Yerba Buena.***

Table III. Knowledge on the Uses of the Selected herbal Plants (n=50)

Herbal Plants	Uses	Weighted Mean	Descriptive Equivalent (DE)
Akapulko	Cough	1.38	Not Knowledgeable
	Mouthwash	1.24	Not Knowledgeable
	Purgative	1.26	Not Knowledgeable
	Skin Diseases	1.72	Knowledgeable
Ampalaya	Anti-helminthic	1.64	Knowledgeable
	Anti-pyretic	1.34	Not Knowledgeable
	Cough	1.94	Knowledgeable
	Dysentery	1.66	Knowledgeable
	Diabetes Mellitus	2.18	Knowledgeable

Bawang	Anti-hypertensive	2.68	Very Knowledgeable
	Asthma	1.82	Knowledgeable
	Cough and colds	1.74	Knowledgeable
	Headache	1.58	Knowledgeable
	Sore throat	1.58	Knowledgeable
	Toothache	2.08	Knowledgeable
	Mosquito bite	1.60	Knowledgeable
Bayabas	Anti-Diarrhea	2.70	Very Knowledgeable
	Aromatic bath	2.78	Very Knowledgeable
	Nose bleeding		
	Tooth ache	1.48	Not Knowledgeable
	Wounds		
	Vaginal wash	1.88	Knowledgeable
		2.68	Very Knowledgeable
		2.52	Very Knowledgeable
Tsaang Gubat	Anti-Diarrhea	1.84	Knowledgeable
	Stomach ache	2.00	Knowledgeable
Yerba Buena	Arthritis	1.72	Knowledgeable
	Cough and colds		Knowledgeable
	Fever	2.02	
	Headache	1.68	Knowledgeable
	Insect bites	1.72	Knowledgeable
	Stomachache	1.72	Knowledgeable
	Swollen Gums	1.74	Knowledgeable
	Toothache	1.70	Knowledgeable
		1.76	knowledgeable\

Relationship of the Awareness and Knowledge on the Preparation and Uses of the Herbal Plants to Respondents' Profile

Table IVa. Relationship between the Awareness on the Availability of the Selected Herbal Plants and the Respondents' Profile **(**n=50)

Variables	Computed Chi-square	Chi-square (.05)
Age	5.348^{ns}	18.307
Gender	0.989^{ns}	11.070
Civil status	2.525^{ns}	18.307
ethnic origin	12.052*	11.070
Educational	0.842^{ns}	18.307
Attainment	10.934^{ns}	24.996
Occupation		

Legend: *-significant; ns –not significant

Statistical analysis (Table 5a) using the Chi-square test of independence shows no relationship of the awareness on the availability of the herbal plants with the respondents' profile except ethnic origin.

Table IVb. Relationship between the Knowledge on the Preparation of the selected herbal plants and the Respondents' Profile **(**n=50)

Variables	Computed Chi-square	Chi-square (.05)
Age	4.920^{ns}	9.488
Gender	1.559^{ns}	5.991
Civil status	1.239^{ns}	9.488
Ethnic Origin	6.558^{*}	5.991
Educational	1.431^{ns}	9.488
Attainment	9.900^{ns}	12.594
Occupation		

No significant relationship was determined on the level of knowledge on the preparation of the herbal plants except origin where the highlanders were significantly more knowledgeable than the lowlanders.

Table IVcs. Relationship between the Knowledge on the Use of Selected Plants and Respondents' Profile

VARIABLES/ HERBAL PLANTS	*Akapulko*		*Ampalaya*		*Bawang*		*Bayabas*		*Tsaang Gubat*		*Yerba Buena*	
	X^2c	.05	X^2c	.05	X^2c	.05	X^2c	.05	X^2c	.05	X^2c	.05
1. Age	3.96	25.00	1.77	15.51	4.21	21.03	6.52	18.31	7.83	5.99	3.56	23.69
2. Gender	0.97	7.82	0.68	9.49	1.65	12.59	1.36	11.07	1.10	3.84	0.60	14.08
3. Civil Status	2.14	18.30	2.34	15.51	1.66	21.03	1.29	18.31	3.06	5.99	13.26	23.69
4.Educational Attainment	3.80	18.31	4.75	15.51	5.63	21.03	7.52	18.31	8.98	5.99	4.00	23.69
5.Ethnic Origin	0.74	7.82	0.52	9.49	0.70	12.59	11.5	11.07	0.28	3.84	2.71	14.07
6.Occupation	3.08	25.00	25.9	15.51	11.8	21.03	2.60	25.00	3.67	5.99	7.06	23.69

Table IVc indicates no significant relationships between the knowledge on the uses of the herbal plants with the respondents' profile as indicated by the computed chi-square values along the selected profiles which are consistently lower than the significant values. The null hypothesis is therefore accepted at .05 significant levels.

Conclusions

The respondents were very aware on the availability of *bayabas, bawang* and *ampalaya,* but moderately aware of *akapulko, tsaang gubat,* and *yerba Buena*

Very knowledgeable on the preparation of the herbal plants by decoction and compression except infusion

Not knowledgeable on the uses of *akapulko* to cure cough, and as mouthwash and purgative; on the anti-pyretic effect of ampalaya; and use of *bayabas* to prevent nose bleeding

Recommendations

Strengthen dissemination and information campaign on tsaang gubat and yerba Buena
Conduct trainings on the preparation of the herbal plants by infusion
Strengthen information on the uses of akapulko to cure cough, and as mouthwash and purgative; ampayala as anti-pyretic; and bayabas to prevent nose bleeding
Program on herbal demo farm, production and dispersal
Inclusion of medicinal plant conservation in their biodiversity planning and implementation of policies on medicinal plants by the National Government.

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