Knowledge and Utilization of Traditional Medicine among the Communities of Bucas Grande Island

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Abstract

This study assessed the level of knowledge and utilization of traditional medicine among the communities of Bucas Grande Island, Siargao Island, Surigao del Norte, Philippines. It employed a quantitative-qualitative research design. Data gathered from the eleven (11) different affiliations existing in Bucas Grande Island using a researcher-made questionnaire were analyzed using frequency count and percent computation, mean and standard deviation, ANOVA with Scheffe's Post Hoc comparison test, and Pearson Product Moment correlation.

It revealed that the majority of the residents are affiliated to Maharlika Ecumenical Catholic Apostolic (MECA), females, 48 to 57 years old, married and elementary graduates, unemployed with a family monthly income of less than ₱5000, and a family size of three to four members. Furthermore, results showed their high level of knowledge of traditional medicine and a moderate level of utilization. Leaves from herbs are the most utilized part for the treatment of ailments and were commonly prepared through decoction. Remedies are mostly administered orally and the rest are applied topically.

The high level of knowledge on traditional medicine among the populace of Bucas Grande Island is not influenced by sex, religion, and family size. However, their moderate level of utilization is greatly influenced by their educational attainment, religion, affiliation and family income.

A high diversity of local medicinal plants (113 species corresponding to 51 families and 102 genera) reveals the prevalence on traditional health medicine even in this modern times. Hence, there is a need for conservation of these medicinal plants along with preservation of the locale's indigenous knowledge.

Keywords— Traditional knowledge and utilization; Traditional medicine; Bucas Grande Island

I. INTRODUCTION

Bucas Grande Island, Surigao del Norte, Philippines is home of the Sohoton Cove National Park. It has endowed its people with diverse medically useful plants, which have yet to discover. Residents of the area belonged to various cultural communities. Being far from the city, most of them resort to herbal medication. The practice of herbal medicine in the place has come a very long way. Undeniably, the use of herbal remedies has coexisted with man and has been considered as the oldest form of health care known to humankind (Morilla & Demayo, 2019). Such practice is believed to have been passed through the next generation. Preservation of this rich knowledge in traditional medicine is necessary. Alduhisa and Demayo (2019) opined that knowledge of plants, particularly on their medicinal values, is based on man's experience through the years. Some available medicines nowadays are products of plants, which have been studied clinically.

Traditional healers or practitioners are considered to be an important source of information about the use of alternative medicine. They have good knowledge of

traditional medicine. The acceptability and prevalence of such are high and can be related to cultural acceptability, easy accessibility, and affordability (Wassie et al, 2021).

Hence, this study determined the level of knowledge and utilization of traditional medicine among the communities of Bucas Grande Island (Socorro), Siargao Island, Surigao del Norte. It specifically looked into the (1) profile of the respondents as to: sex, age, civil status, highest educational attainment, religion, affiliation, occupation, family monthly income, and number of family members; (2) the level of knowledge and utilization of traditional medicines of the respondents; (3) if there is a significant difference on the level of knowledge on traditional medicines when grouped according to their profile variables; (4)if there is a significant difference on the level of utilization of traditional medicines when grouped according to their profile variables; (5) if there is a significant relationship between knowledge and utilization of traditional medicine of the respondents; and (6) identifying some of the common local plants used by the respondents as traditional medicine.

Results of which can be baseline data for policymaking specifically on the use of traditional medicine and flora conservation and preservation. Likewise, available medicinal plants in the area and the knowledge of the people of the usefulness of the diverse plants can be potential in the pharmaceutical industries. Hence, information on the traditional knowledge and utilization of medicinal plants among the residents needs documentation.

II. METHODS

A descriptive design was employed in this study. Data were gathered from the 11 different affiliations existing in Bucas Grande Island namely Bayanihan (with the highest number of members), Bucas Grande Farmers Association Incorporated (BGFAI), De Oro Sunflower, De Oro Farmers Association Incorporated (DOFAI), Farmers, Kabanbanan, Kabisig, Kausa Farmers, Land of Promise, Sohoton and Tabok Socorro Farmers Association Incorporated (TSFAI). Informed consent was ensured and the researcher-made questionnaire anchored on the study of Aragaw, Afework, and Getahu (2020) was translated in the respondents' dialect. It was validated by experts and subjected to reliability tests using Cronbach alpha. 373 from the 12,456 member-residents were the respondents. Ten (10) traditional healers from different affiliations and 363 non-traditional medical practitioners. The interview focused on basic questions concerning the 10 informants' knowledge of ethnobotany.

The analysis of data was performed using frequency count and percent computation to determine the profile of the respondents. Mean and standard deviation described the respondents' level of knowledge and utilization of traditional medicines. ANOVA with Scheffe's Post Hoc comparison test was utilized to describe the significant difference in the level of knowledge and utilization on traditional medicines when grouped according to their profile variables and Pearson Product Moment correlation was used to determine the significant relationship between knowledge and utilization of traditional medicine of the respondents.

III.RESULTS AND DISCUSSION
On the Profile of Respondents

Table 1 shows the profile of the respondents in terms of sex, age, civil status, educational attainment, religion, affiliation, occupation, family monthly income and family size.

	Profile	Frequency	Percent
Sex	Female	263	70.3
	Male	111	29.7
Age	18-27	26	7
	28-37	41	11
	38-47	92	24.6
	48-57	94	25.1
	58-67	71	19
	67 and above	50	13.4
Civil Status	Single	8	2.1
	Married	312	83.4
	Solo parent	25	6.7
	Others	29	7.8
Educ'l Attainment	No formal school	2	0.5
	Elementary level	99	26.5
	Elementary graduate	100	26.7
	High school level	88	23.5
	High school graduate	54	14.4
	College level	15	4
	College graduate	13	3.5
	With units in Masters	2	0.5
	Master's degree holder	1	0.3
Religion	Catholic	1	0.3
	IFI	168	44.9
	MECA	205	54.8
Affiliation	Bayanihan	108	28.9
	BGFAI	48	12.8
	De Oro Sunflower	5	1.3
	DOFAI	36	9.6
	Farmers	27	7.2
	Kabanbanan	5	1.3
	Kabisig	17	4.5
	Kausa Farmer	17	4.5
	Land of promise	7	1.9
	Sohoton	87	23.3
	TSFAI	17	4.5
Occupation	Government employee	1	0.3
	Self-employed	149	39.8
	Unemployed	224	59.9
Family monthly income	Less than 5000	249	66.6
	5001-10000	121	32.4
	10001-15000	2	0.5
	20000-25000	2	0.5
Family size	1 to 2	38	10.2
	3 to 4	124	33.2
	5 to 6	120	32.1
	6 and above	92	24.6

Most of the respondents are female who are 48-57 years old, married and have graduated only in elementary. Majority of the respondent's religion is MECA (Maharlika Ecunomical Catholic Apostolic). Majority of them belongs to Bayanihan affiliation and are unemployed with a family monthly income of less than 5000 having a family size of 3 to 4 members.

Age, sex, and educational status have a great impact on the prevalence of traditional home remedy usage (Berhane & Vijaibasker, 2015) and there is a high expectation of enormous traditional knowledge and use of medicinal plant species exists from diverse cultures, languages, and beliefs of the people (Wanjohi et al., 2020).

On the Respondents' Level of Knowledge of Traditional Medicines

Table 2. Respondents' Level of Knowledge of Traditional Medicines

Indicators	Mean	SD	QD
1. I have heard many times about Traditional Medicine (TM).	3.71	0.53	Strongly agree
2. Traditional medicines are accessible with affordable cost in our community.	3.66	0.54	Strongly agree
3. Health education about risks and benefits of TMs are very important.	3.71	0.50	Strongly agree
4. Nonsterile TMs are harmful if given through injection.	2.14	0.94	Disagree
5. Traditional medicines are more effective and safer than modern health services.	3.53	0.64	Strongly agree
6. Traditional medicines do produce less adverse effect compared to Modern Medicine (MM).	3.57	0.60	Strongly agree
7. Having traditional healers in our community is very helpful in our daily lives especially in times of emergency.	3.67	0.53	Strongly agree
8. I think that if TMs are formulated in a modern dosage form, they will be good enough to treat diseases with appropriate dose and route.	3.67	0.54	Strongly agree
9. I believe that there is no harmful traditional practice.	3.73	0.47	Strongly agree
10. Traditional healers provide their own traditional medicines when we seek for treatment.	3.47	0.66	Strongly agree
Average	**3.49**	**0.23**	**High**

The results implied that the respondents in Bucas Grande Island have "high" level of knowledge regarding traditional medicine. They are knowledgeable enough on traditional medicine the fact that they heard it many times already. Most of them emphasized that they learned their skills on traditional medicine from their ancestors. Traditional medicines are more effective and safer than modern health services because they used and practiced this for how many times and years already (Tirfessa, 2017). This result is supported by the study of Demetillo, Betco and Goloran (2019) which articulated that majority of the respondents are dependent on other organisms and in the plant kingdom as it is most essential to human well-being especially in terms of supplying health basic needs.

Moreover, the results revealed that having traditional healers in their community is very helpful in their daily lives especially in times of emergency obviously because of its location, that is too far from the city proper and this result is being supported by the study of Aragaw, Afework, and Getahu (2020).

On the Respondents' Level of Utilization of Traditional Medicines

Table 3. Respondents' Level of Utilization of Traditional Medicines

Indicators	Mean	SD	QD
1. I highly recommend the use of Traditional Medicines in our community.	3.68	0.55	Strongly agree
2. TMs are still accepted and available with affordable cost in our community.	3.56	0.59	Strongly agree
3. I do believe that breaking secrecy of TMs may lead to loss of its effectiveness.	3.17	0.77	Agree
4. I do support integration of MM with TM to improve healthcare coverage.	3.63	0.53	Strongly agree
5. I have used herbal medicines either by myself or through visiting a traditional home remedy before.	3.74	0.48	Strongly agree
6. I have regretted of consulting to traditional healers.	1.33	0.49	Strongly disagree
7. I have encountered some adverse effects when I used TM.	1.41	0.53	Strongly disagree
8. TMs cured diseases that cannot be treated with MMs.	3.38	0.67	Strongly agree
9. I am planning for TM plant cultivation and registration to government agencies for cultivation and marketing of TM plants as crops.	3.52	0.64	Strongly agree
10. I am now helping our community in preserving local knowledge and utilization of TM.	3.72	0.46	Strongly agree
Average level of Utilization	3.11	0.23	Moderate

Based on Table 3, the overall average mean is 3.11 with an SD of 0.23 which signifies that respondents in Bucas Grande have a "moderate" level of utilization of traditional medicines. This means that indigenous knowledge is the accumulation of knowledge, rules, standards, skills, and mental sets, which are acquired by local people in a particular area. Wassie, Aragie, Taye, & Mekonnen (2015) elucidated that prevention and elimination of physical, mental, or social imbalance can be treated by the combination of knowledge, utilization, and practices of traditional medicine with exclusive practical experience and observation handed down from generation to generation, whether verbally or in writing.

On the Significant Difference on the Level of Knowledge on Traditional Medicine when grouped according to the profile variables

Table 4. Significant Difference on the Level of Knowledge on Traditional Medicines when grouped according to the profile variables

Profile	F (df)	p-value	Remarks
Sex	2.48(1,372)	0.12	Not significant
Age	2.42(5,368)	0.035	Significant
Civil status	5.25(4, 369)	0	Significant
Educational attainment	2.09(8,365)	0.04	Significant
Religion	1.09(2,371)	0.34	Not significant
Affiliation	4.89(10,363)	0	Significant
Occupation	3.84(2,371)	0.02	Significant
Family Monthly Income	3.41(2,371)	0.02	Significant
Family size	2.53(3,370)	0.25	Not significant

It can be deduced that regardless of sex, the dissimilarity of their religion and the distinction of the actual size of their family does not really affect their level of knowledge regarding traditional medicine. This is because for as long as you are willing and interested to learn on this matter you have a choice, you will learn it from different experiences and through learnings from elders and traditional healers in the community (Berhane and Vijaibasker, 2015).

Scheffe's post hoc results revealed that the age of the respondents "differ significantly" $F(5, 368)=2.42$, p =0.035 < 0.05 on their level of knowledge on traditional medicine. Older informants most likely had more knowledge of medicinal plant uses and practices based on their long-term experience. This result corresponded to the expectation of Dapar et al., 2020. Accordingly, this also implied that younger generations were becoming more acquainted and educated with modern therapeutic treatment making them more reluctant in their traditional medicinal plant practices like gathering and peddling. This transforming awareness, social, and cultural experiences could influence their medicinal plant interest, traditional knowledge, and attitudes among the residents of Bucas Grande Island.

When grouped according to civil status, $F(4,369)=5.25$, p=0 < 0.05. The married and solo parent showed higher knowledge on the medicinal plant than single parents as revealed by the "very high" significant difference. These results implied that married respondents were more exposed during community gatherings, which involved discussions about medicinal plants with regard to their uses and applications. The level of knowledge of traditional medicines of the respondents also statistically "significantly vary" when grouped according to educational attainment ($F(8, 365)=2.09$, p=0.04 < 0.05), affiliation($F(10,363)=4.89$,p=0 < 0.05) occupation($F(2, 371)=3.84$,p=0.02 < 0.05), and family monthly income($F(2, 371)=3.41$,p=0.02 < 0.05). Post hoc test implied that respondents who finished the tertiary level were more educated with modern medicine and highly acquainted with commercial drugs available over-the-counter for immediate treatment and therapy of their health problems. On the other hand, members with lower educational levels had more medicinal plant knowledge, and most traditional healers, gatherers, and peddlers finished at most their secondary education.

In terms of community affiliation, various affiliations existing in Bucas Grande Island hits the "highest impact" on their level of knowledge of traditional medicine. This implied that community affiliation influenced a lot on their level of knowledge due to their different culture, beliefs, behavior, and faith as well as their different ways of thinking. In terms of occupation, self-employed and unemployed

groups tend to have the "same level" of knowledge of traditional medicines and know more about traditional medicines than the group of government employees.

As to family monthly income, groups with income ₱ 15,000 and less have the "same level" of knowledge of traditional medicines and are significantly more knowledgeable of traditional medicines than those who have an income of ₱ 20,000-25,000. The result of this study is supported by Wassie et al., (2015) because they found out that the use and level of knowledge of traditional medicine were significantly associated with age, civil status, educational attainment, affiliation/ethnicity, occupation, and family income. Sex, religion, and family size were found to have no association with their level of knowledge of traditional medicine.

There is a significant difference in the level of knowledge on traditional medicine when grouped according to age, civil status, educational attainment, affiliation, occupation, and family monthly income.

On the Significant Difference on the Level of Utilization on Traditional Medicine when grouped according to the profile variables

Table 5. Significant Difference on the Level of Utilization on Traditional Medicines when grouped according to the profile variables

Profile	F (df)	p-value	Remarks
Sex	0.37(1,372)	0.54	Not significant
Age	1.95(5,368)	0.08	Not significant
Civil status	1.08(4,369)	0.37	Not significant
Educational attainment	2.26(8,365)	0.2	Significant
Religion	13.79(2,371)	0	Significant
Affiliation	6.77(10,363)	0	Significant
Occupation	1.65(2,371)	0.19	Not significant
Family Monthly Income	2.53(2,371)	0.05	Significant
Family size	1.38(3,370)	0.24	Not significant

Results revealed that based on sex, age, civil status, educational attainment, occupation, and family size, the p-values are greater than 0.05 level of significance. Meaning, it "did not significantly affect" the respondent's level of utilization when it comes to traditional medicine exactly because health cases does not depend on the gender of the person, age of a

person, marital status, exact profession in life, and of course the size of the family of a person but, rather they mainly aimed in preventing and treating illnesses using these traditional medicines without thinking its efficacy and safety (Welz, Klein & Menrad, 2018). Concerning information sources, independent reading, and family traditions were found to be equally or even more important than consulting medical experts.

The level of utilization of traditional medicines of the respondents significantly "vary" when grouped according to educational attainment, religion, affiliation, and family monthly income. These four factors contributed a lot to the respondents' level of utilizing traditional medicines. Different affiliations also have different ways of thinking and ways of living. The majority of them cannot afford or access high-end medication because of financial constraints and most of all due to its location that is too far from the city proper.

There is a significant difference in the level of utilization of traditional medicine when grouped according to educational attainment, religion, affiliation, and family size.

On the Significant Relationship between Knowledge and Utilization of Traditional Medicine of the respondents

Table 6. significant relationship between knowledge and utilization of traditional medicine of the participants

Variables	r	p-value	Remark
Knowledge vs Utilization	0.48	0	Significant; Moderate correlation

Since the p-value is less than 0.05 level of significance, it is concluded that there was a statistically "significant relationship" between the knowledge and utilization of traditional medicines of respondents. The correlation coefficient of 0.48 indicates a moderate positive correlation between the said variables. In other words, the increase in knowledge of traditional medicines strengthens their utilization of traditional medicines and the level of knowledge of the respondents on traditional

medicine was highly associated with their level of utilization.

There is a statistically significant relationship between the level of knowledge and utilization of traditional medicines of the respondents.

On the different common Local Plants Used as Traditional Medicine

Table 7. Topmost Local Plants Used by the Respondents as Traditional Medicine

Family	Species	Local Name	# of Respondents
Asteraceae	Blumea balsamifera	Gabon/Sagbong	34
Lamiaceae	Coleus amboinicus	Karabo	33
Rutaceae	Citrus microcarpa	Dolsi	33
Euphorbiaceae	Jatropha curcas	Tuba-Tuba	30
Crassulaceae	Bryophyllum pinnata	Hanlilika	28
Lamiaceae	Mentha spicata	Hamboboyna	28
Euphorbiaceae	Euphorbia hirta	Tawa-Tawa	27
Asteraceae	Artemisia vulgaris	Hilbas	26
Compositae	Chrysanthemum indicum	Mansanilya	26
Moringaceae	Moringa oleifera	Kalamonggay	26

A high diversity of local medicinal plants (113 species corresponding to 51 families and 102 genera) reveals the prevalence of traditional health medicine even in this modern times. Hence, there is a need for conservation of these medicinal plants along with preservation of the locale's indigenous knowledge

IV.   CONCLUSION

The knowledge on traditional medicines and utilization of the same of Bucas Grande Island is considered to be important in the identification and conservation of available plant resources to cure various diseases and considered to be the cheapest source of medicines to ease various ailments.

The rich source of information related to the importance of different local medicinal plants and how they can be used in treating ailments contributes greatly to the repository of traditional medicinal plant knowledge.

Attachment to culture, remote location, and financial constraints can be the reasons why the majority of the residents in Bucas Grande Island are still outdated regarding modern healthcare needs.

The level of knowledge on traditional medicine among the populace of Bucas Grande Island is not influenced by sex, religion, and family size. However, their level of utilization is greatly influenced by religion, affiliation, and family monthly income.

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