Knowledge and Utilization of the 10 DOH-Endorsed Herbal Medicinal Plants Among Resident Physician Trainees of the University of Santo Tomas Hospital*

Marjoulaine C. Bergonia, MD and Ma. Teresa Tricia Guison-Bautista, MD, FPAFP

Background: In the recent years, there appeared to be a rise of herbal products in the market. Thus, it becomes imperative for health practitioners to become knowledgeable on this aspect of complementary medicine. However, data on familiarity with and actual utilization of the 10 DOH-endorsed herbal medicinal plants by the health practitioners is lacking.
Objective: This study was done in order to determine the knowledge and utilization of the 10 DOH-endorsed herbal medicinal plants among the resident physician trainees of the University of Santo Tomas Hospital (USTH).
Methods: A total of 143 randomly selected trainees from different specialties and year levels were included in this study. A one-time interaction with the residents was done, during which, they were asked to answer a 5-page face to face survey questionnaire.
Results: The study revealed that majority of the respondents is aware of the 10 DOH-endorsed herbal medicinal plants. However, most of them perceive the use of herbal medicines to be only "a little effective". Prescribers are prompted mainly by its affordability. The residents can fairly identify the herbal medicinal plants and are adept with the indications for use of these plants. In spite of this, majority of the residents are not familiar with the proper preparation methods.
Conclusion: Overall, the respondents appear to be more aware with certain herbal medicinal plants such as ampalaya, bawang, lagundi and sambong but obviously lack familiarity with other plants including ulasimang bato, yerba buena and niyog-niyogan.

Key words: herbal, medicinal plant, resident physician

Introduction

Despite the recent discoveries and advancements made in the medical field, both locally and internationally, traditional medicine continues to play a major role in our health care system most especially in rural areas.[1] For millions of people across the globe, herbal medicines, traditional treatments, and traditional practitioners are the main source of health care, and sometimes the only source of care.[2] General accessibility, affordability and cultural acceptability of this modality of treatment are just some of the reasons for the unceasing popularity of this treatment modality.

* From the Department of Family Medicine, University of Santo Tomas Hospital

Without a doubt, the use of herbs remains to be a core part of all systems of traditional medicine.[2] Most commonly, people use herbal medicines to achieve a healthy state mainly through prevention and treatment of diseases.[4] In the Philippines, medicinal plants and herbs have been used by our Filipino forefathers for many centuries and their knowledge has been passed on from generation to generation. In 1992, the Department of Health (DOH), through its former Secretary, Dr. Juan M. Flavier, formally endorsed 10 medicinal plants to be used as herbal medicine. These include: Akapulko (*Cassia alata*), Ampalaya (*Momordicacharantia*), Bawang (*Allium sativum*), Bayabas (*Psidiumguajava*), Lagundi (*Vitex negundo*), Niyog-niyogan (*Quisqualisindica L.*), Sambong (*Blumeabalsamifera*), Tsaang gubat (*Ehretiamicrophylla Lam.*), Ulasimang bato or Pansit-Pansitan (*Peperomiapellucida*) and Yerba Buena (*Clinopodiumdouglasii*). All 10 herbs have been thoroughly tested and clinically proven to have medicinal value in the relief and treatment of various aliments.[2]

Aside from the literature of the 10 medicinal plants published and distributed in 1992, various efforts to disseminate information regarding the use of these herbal medicines have been made. Courses in basic sciences incorporate subjects that tackle the use of these medicinal plants. Barangay health workers likewise conduct lectures concerning these herbal medicinal plants to the laymen. Moreover, traditional medicine, specifically the use of herbal medicine, has been featured in local programs such as "Salamat Dok" which aimed to educate the general public about the uses of such medications.

In the recent years, there appeared to be a considerable rise of herbal products such as extracts, powders, capsules and tea preparations in the market. Creative promotional strategies coupled with an increase in awareness and consequent demand on the part of the consumer has made these medications more popular as an alternative to conventional medicine. However, data on familiarity with and actual utilization of the 10 DOH-endorsed herbal medicinal plants by the health practitioners is lacking. With the rise of demand for these herbal medicinal plants, it then becomes imperative for health practitioners, especially physicians, to become knowledgeable on this aspect of complementary medicine in order for them to satisfactorily answer patient queries and at the same time maximize its use. Hence, the aim was to determine knowledge and utilization of the 10 DOH-endorsed herbal medicinal plants among University of Santo Tomas Hospital (USTH) resident physician trainees by determining the following: percentage of the respondents who are aware about the 10 DOH-endorsed herbal medicinal plants, person/s responsible for introducing herbal medications to the respondents, perceived effectiveness of these herbal medicinal plants, top reasons for using the 10 DOH-endorsed herbal medicinal plants and knowledge of the respondents with the 10 DOH-endorsed herbal medicinal plants with regards to appearance, use and preparation. In the light of the growing consumer utilization and demand for knowledge about herbal medicinal plants, the results of this study will guide trainees and respective trainors on the need to re-educate and re-integrate the subject matter in their training curriculum.

Materials and Methods

General Study Design and Setting

This is a descriptive, cross-sectional study that aimed to assess the knowledge and use of the 10 DOH-endorsed herbal medicinal plants by the USTH resident physician trainees. It was conducted from December 2016 to January 2017 in the respective staff rooms of the USTH resident physician respondents in España, Manila, Philippines.

Participants

A total of 143 randomly selected USTH resident physician trainees from different specialties and year levels who have given their informed consent were included in the study.

Data Collection Tool

One-time interaction with the residents was conducted. The residents were asked to answer a 5-page face to face survey questionnaire. The questionnaire included items inquiring about socio-demographic features, herbal medicine familiarity and use. Afterwards, pictures of the ten herbal medicinal plants were shown for them to identify. Questions pertaining to the use and preparation were also included. After completing the questionnaire, a short discussion on the correct answers for each survey item was performed. No manipulation of the environment was done and no intervention was introduced. The responses were then tallied, encoded and subsequently subjected to statistical analysis.

Study Procedures

Consent forms with subject confidentiality and privacy were secured. The survey questionnaire, consisting of 10 items, was given to the respondents. The respondents took as much time as they needed to complete the survey covering the following topics: 1) General demographics, 2) Extent to which the objectives of this activity were met, 3) Perceived significance, applicability and practicality of the activity, 4) Learning experiences in making the family case presentation, 5) Strengths and weaknesses of the activity, 6) Areas of the family case development that they felt they have mastered and excelled in, 7) Areas of the family case development that they had difficulty in, 8) General comments and recommendations.

Statistical Analysis

The data gathered were entered in Microsoft Excel sheets and were analyzed using Statistical Package for Social Sciences version 15 for Windows.

Results and Discussion

A total of 143 residents were included in the study. The general profile of the USTH resident physician respondents is shown in Table 1.

Table 1. Demographic properties who participated in the study.

	n= 143 (%)
Sex	
Female	78 (54.5%)
Male	65 (45.5%)
Age	
<25 years	0 (0%)
25-29 years	109 (76.2%)
30-34 years	29 (20.3%)
>34 years	5 (3.5%)
Marital Status	
Single	132 (92.3%)
Married	4 (2.8%)
Unspecified	8 (5.6%)
Medical School	
NCR	136 (92.3%)
Others	2 (1.4%)
Not specified	5 (3.5%)
Year Level	
1st year	54 (37.8%)
2nd year	49 (34.3%)
3rd year	29 (20.3%)
4th year	9 (6.3%)
5th year	2 (1.4%)
Specialty	
Family Medicine	9 (6.3%)
Surgery	16 (11.2%)
Orthopedic Surgery	10 (7.0%)
ENT	11 (7.7%)
Pediatrics	23 (16.1%)
Internal Medicine	22 (15.4%)
Anesthesiology	12 (8.4%)
Rehab Medicine	9 (6.3%)
Dermatology	8 (5.6%)
Ophthalmology	8 (5.6%)
Anatomic Pathology	3 (2.1%)
Radiology	12 (8.4%)
Place of Residence	
NCR	118 (82.5%)
Others	25 (17.5%)

The female/male ratio was 1.2. Majority (76.2%) of the residents included in the study were between the ages 25-29 years old. Most of them (92.3%) are single and attended a medical school in NCR (95.1%).

Awareness of the 10 DOH-endorsed Herbal Medicinal Plants

Majority of the respondents (92.3%) claimed awareness on the existence of the 10 DOH-endorsed herbal medicinal plants. (Figure 1). Compared to the computed 60% level of awareness of a general population in a local barangays[5] we can see that the former's medical education influenced the result. Apparently, there are no parallel studies similar to our respondents. It is still surprising that 8% of doctors did not now the subject at hand.

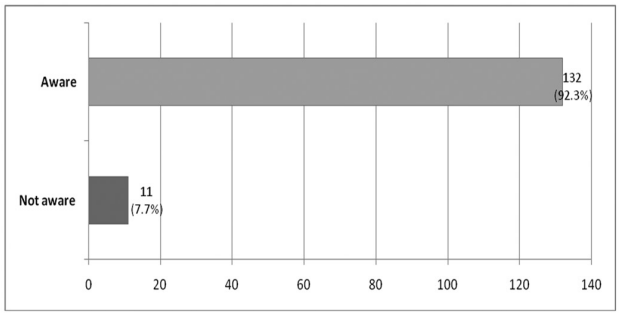

Figure 1. Percentage of resident physicians who are aware and are not aware of the 10 DOH-endorsed herbal medicinal plants

Familiarity with the 10 DOH-endorsed Herbal Medicinal Plants

The respondents who claimed to be aware of the 10 DOH-endorsed herbal medicinal plants were further asked to enumerate the specific plant/s that they are familiar with. Ampalaya (67.8%), Lagundi (66.4%) and Sambong (63.6%), emerged as the top 3 herbal medicinal plants that USTH resident physicians are familiar with. On the other end of the spectrum, Tsaang gubat was the least popular among the group (Figure 2).

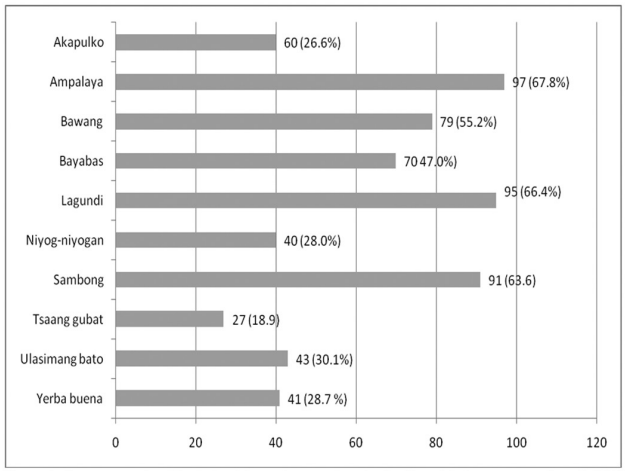

Figure 2. Percentage of resident physicians who report to be familiar with the corresponding 10 DOH-endorsed herbal medicinal plants.

It is worthy to note that the top 3 herbal medications enumerated above are all available in commercial forms. This could have possibly contributed to their increased popularity among the respondents.

Use of Other Herbal Medicinal Plants not Included in the 10 DOH-endorsed Herbal Medicinal Plants

The USTH residents were also asked if, aside from those listed in the 10 DOH-endorsed herbal medicinal plants, they have already tried using other herbal medications. Majority of the respondents (93%) denied using any other herbal medication. Only a minority (7%) claimed to have used other kinds of herbal medicinal plants not included in the official list (Figure 3).

In 2014, Atrillano, et al. were able to identify a total of 39 medicinal plants being used by the villagers in Damarinas City in Cavite, Philippines. A possible explanation why the resident physicians do not use as many other herbal medications as do the general population is that, unlike the general population, the doctors have been trained to prescribe and promote conventional pharmaceutical-grade medications. Thus, a more limited room for using herbal medications.

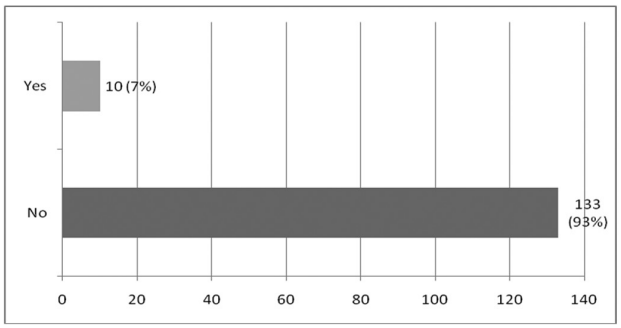

Figure 3. Percentage of USTH resident physicians who have used other herbal medicinal plants aside from the 10 DOH-endorsed herbal medicinal plants.

Other Herbal Medicinal Plants Used

The small number of residents who claimed to be using other herbal medications were subsequently asked to write down the specific herbal medication that they have used. Turmeric and ginger appeared as the most used non-DOH endorsed herbal plants. The other herbal medicinal plants mentioned by the residents include: Malunggay, Aloe Vera, Luya, Mayana, Acitava, Serpentina, Buko, Okra and Kaimito (Figure 4).

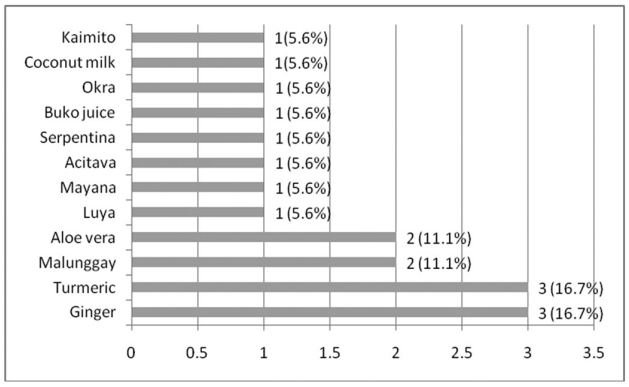

Figure 4. List of other herbal medicinal plants used by the USTH resident physicians.

In the previously mentioned study done by Atrillano et al, the other most common herbal medications used also included Ginger and Malunggay. Aside from these, oregano and guyabano were also highly used.

Person Responsible for Introducing Herbal Medicinal Plants

According to majority of the respondents, it was a fellow doctor (21.7%) who introduced them to the use of herbal medications. Media (18%) and friends (18%) also contributed to their awareness about the herbal medications. Family members and school teachers from pre-medical school were also named as educators and advocates in the use of these herbal medicinal plants. Although not listed as a choice, a number of respondents (2.8%) specifically mentioned medical representatives of commercialized herbal medicinal plants as a source of their knowledge about these plants (Figure 5).

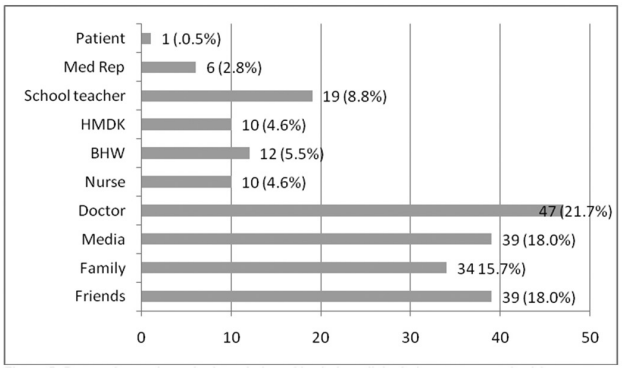

Figure 5. Person from whom the knowledge of herbal medicinal plants was acquired from.

Perceived Effectiveness of Herbal Medicinal Plants

The residents who claimed to have used at least one kind of herbal medication were asked to evaluate the effectiveness of these plants in treating medical conditions. About half of the respondents (52.3%) perceived herbal medicinal plants to be "a little effective" while 36.9% found these to be effective. Only 7% claimed that these herbal medicinal plants were not effective at all (Figure 6) .

The perceived effectiveness of the herbal medicines is low compared to the results of a study done in Trinidad wherein 86.8% of the respondents who were using herbal medicinal plants indicated that herbs were efficacious and

believed to have equal or greater efficacy than conventional allopathic medicines.[6]

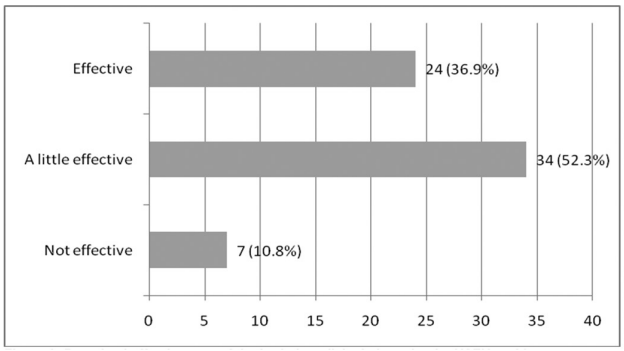

Figure 6. Perceived effectiveness of the herbal medicinal plants by the USTH residents.

Reason for Choosing to Use Herbal Medicinal Plants

About 40% who have used at least one of the 10 DOH-endorsed herbal medicinal plants preferred it over conventional medicine due to the former's affordability. Availability (29.5%), safety (18.2%) and efficiency (10.2%) were the other reasons according to rank.

The results of this study are highly consistent with those study of Kelly, et al. in 2005 which stated that the top reason why laymen use herbal plants was mainly its affordability.

Matching Type: Identification of Herbal Medicinal Plants

The respondents were then asked to identify the name of the plants presented to them using a 10-item matching type. Results revealed Bawang (Garlic) to be the most recognized plant among the 10 DOH- endorsed herbal medicinal plants. It was closely followed by Ampalaya (Bitter melon) and Bayabas (Guava). Sambong and Lagundi, both available in commercial preparations, were also widely recognized by the resident physicians. In general, the average recognition rate of the 10 DOH-endorsed herbal medical plants by the respondents was at 64.5%. (Figure 10)

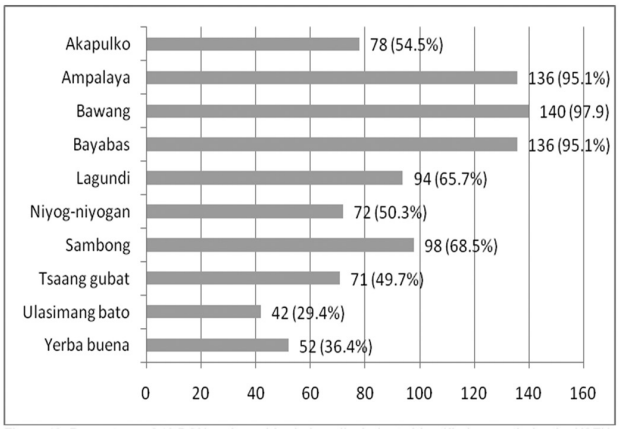

Figure 10. Percentage of 10 DOH-endorsed herbal medical plants identified correctly by the USTH resident physicians.

Matching Type: Use of Herbal Medicinal Plants

A good number of the respondents were able to accurately match the correct indications for use of the 10 DOH-endorsed herbal medicinal plants. Ninety percent of the respondents are well aware that Ampalaya is used to lower down blood sugar levels, while Lagundi is used for cough. More than 80% of the respondents were also able to accurately point that Sambong may be used to eliminate kidney stones, and that Bayabas is used as an antiseptic for wounds and cuts. Tsaang gubat, however, was the least popular in terms of its use with only 53.1% of the respondents being able to identify its use for stomach aches and pains (Figure 11).

Matching Type: Preparation of Herbal Medicinal Plants

Sadly however, the respondents generally had a hard time matching the correct preparation for the 10 DOH-endorsed herbal medicinal plants. Although 79% apparently know the standard preparation for Sambong, less than half of the respondents were able to match the

appropriate preparation for akapulko, ampalaya, bayabas, niyog-niyogan, ulasimang bato and yerba buena. The average obtained for knowledge in preparation of the herbal medicinal plants was a low 44.3 % (Figure 12) .

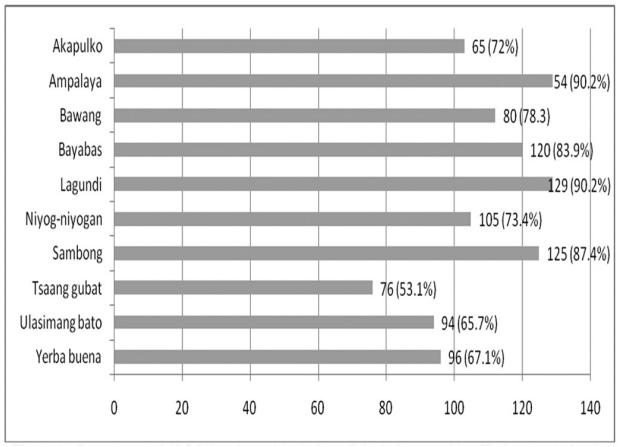

Figure 11. Percentage of 10 DOH-endorsed herbal medicinal plant use identified correctly by the USTH resident physicians.

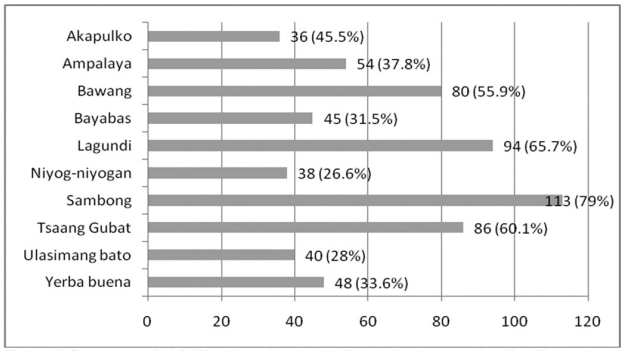

Figure 12. Percentage of 10 DOH endorsed herbal medicinal plants preparation identified correctly by the USTH resident physicians.

Conclusion

Based on the results, a good majority of the residents are aware about the existence of the 10 DOH-endorsed herbal medicinal plants with ampalaya, lagundi and sambong being the most popular. This could be attributed to the exposure of these herbal medicinal plants to the general population being available commercially in the form of capsules and extracts. Aside from the 10 DOH-endorsed herbal medicinal plants, most of the USTH resident physicians do not make use of other herbal plants. Much of the acquired knowledge came from fellow doctors, who, in fact were also more well versed on the herbal medicinal plants endorsed by the DOH. Majority of the respondents perceive the use of herbal medicines to be "a little effective", probably also one of the reasons why some resident physicians are hesitant to make use of these herbal plants. Prescribers of herbal medications are prompted by its affordability which is also the main consideration of some patients who patronize them over conventional drugs. Overall, the residents can fairly identify the herbal medicinal plants especially those currently in the market such as ampalaya, bawang and guava. Moreover, the residents are also adept with the indications for use because of commercial availability and promotion of such products. However, majority of the residents are not familiar with the proper preparation methods as reflected by their less than optimal performance in that part of the questionnaire. This may be an important area to look into since one cannot be expected to achieve maximal benefits from a medication not correctly prepared. Overall, the respondents appear to be more aware with certain herbal medicinal plants such as ampalaya, bawang, lagundi and sambong but obviously lack familiarity with other plants including ulasimang bato, yerba buena and niyog-niyogan.

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