

INDIGENOUS KNOWLEDGE AND HERBS RECOGNITION AMONG STUDENTS OF FOUNDATION IN SCIENCE PROGRAMME AT CENTRE OF FOUNDATION STUDIES, UiTM CAWANGAN SELANGOR, KAMPUS DENGKIL- A CASE STUDY

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ABSTRACT

With no doubts, the values of Malaysian herbs plant are not only limit to its medicinal benefits but also in local knowledge of each herb plant. Ethnic Malays, bumiputera Semenanjung, Sabah and Sarawak are well known for the practical use of herbs plant in everyday life. However, in assessing whether the younger generation has general knowledge and recognize the Malaysian herbs plant, it is unclear. This is because the indigenous knowledge about herbs plants is normally transferred by the elder people. Hence a, case study was conducted among 236 students of Foundation in Science program at the Centre of Foundation Studies, UiTM Cawangan Selangor Kampus Dengkil. The objective of the study was generally to see their level of indigenous knowledge which includes their understanding and recognition towards 20 type of herbs plants that were very common to be grown in Malaysia. The study was carried out using questionnaire survey. Our studies shown that overall 236 students have indigenous knowledge and able to recognize the herbs plant.

Keywords: *knowledge and understanding about herbs plant, students of Foundation in Science program, recognition of herb's plants, young generation*

1.0 INTRODUCTION

Herbs are the usable parts of herbaceous plants. Knowledge level about herbs may be obtained by those who lived in a specific area such as city or village. According to Greniers (as cited in Sahri, Nordin & Harun, 2012) indigenous knowledge is a distinctive, traditional local knowledge existing within and developed around the specific conditions of women and men that are indigenous to a geographical area. The knowledge is accumulative, representing generations of experiences, careful observations, and trial-and-error experiments. According to

Gapor and Enchoh (2013), Malay community at Balik Pulau is still nurturing planting the herbs around their house because these herbs plant are commonly used in their daily life such as usage in cooking, health purposes and to make beautiful landscape surrounding the house. Therefore, using herbal remedies were cost-effective, readily and easily available and its effectiveness was proven in generations as these community obtain these indigenous knowledges by the elders before them. Fatah (2003) said that plant that exist in the surrounding has a promising potential to become medicine if it is study scientifically and empirically. There were also previous studies conducted by other researchers to record the usage of herbs plant among the Malay especially in the remote village because they believed that usage of herbs plant are not fully explored. (Ramli, Milow & Ong, (2015), Milow, Ghazali, Mohammad & Ong, (2011), Ong, Nik Besar & Milow, (2011), Ong, Mat Zuki & Milow, (2011)).

However, this vital information on the use of herbs plants for health care are now becoming less and less popular to the younger generations. According to Law and Soon (2013), usage of herbal medicines among 460 pregnant Malay women in Kelantan, 89.8% women were in the low end of the herb's knowledge. This will result to the erosion of ethnobotanical information or indigenous knowledge. Ismail, Linatoc, Mohamed and Tokiman (2015) found that usage of medicinal plants that were used by the Jakun people of Endau-Rompin for treatments of Malaria need to be documented. The need for this documentation was because to avoid knowledge erosion and lost in succeeding generations. One of the supporting concern to this reason was because the younger generation in the Jakun community were less interested in practicing the traditional knowledge and generally rely on the convenience of modern medicine for treatments. In addition, younger generations also have limited knowledge about plants until they joint program such as garden project, then they capable to obtain knowledge about the names of the plants, medicinal value and its usage. (Esa & Megat Jiwa, 2015).

Hence, a study was conducted with the objective to assess whether the younger generation nowadays has indigenous knowledge and able to identify these herbs plant. This study was targeted on the young generation age 18 years old and were the students from Foundation in Science Programme at Centre of Foundation Studies, UiTM Kampus Dengkil in year 2018. At this age, these students can be categorized as younger generation. Hence, we want to look at whether these students have same common view and response on the herbs plant. Therefore, they were suitable candidate to assess their level of knowledge towards herbs plants.

1.1 RESEARCH DESIGN

The study aims to investigate younger generation indigenous knowledge about herbs plants and recognition towards 20 herbs plant that are commonly grown in Malaysia. Research design model is proposed in Figure 1 and is used in this study. This model is designed by referring to the previous study (Strgar, Pilih, Pogacnik & Znidarcic, 2013). Strgar *et al.* (2010) found that knowledge of medicinal plants and their uses among young generation in Slovenia was not satisfactory. The young generation were only able to identify correctly a few plants.

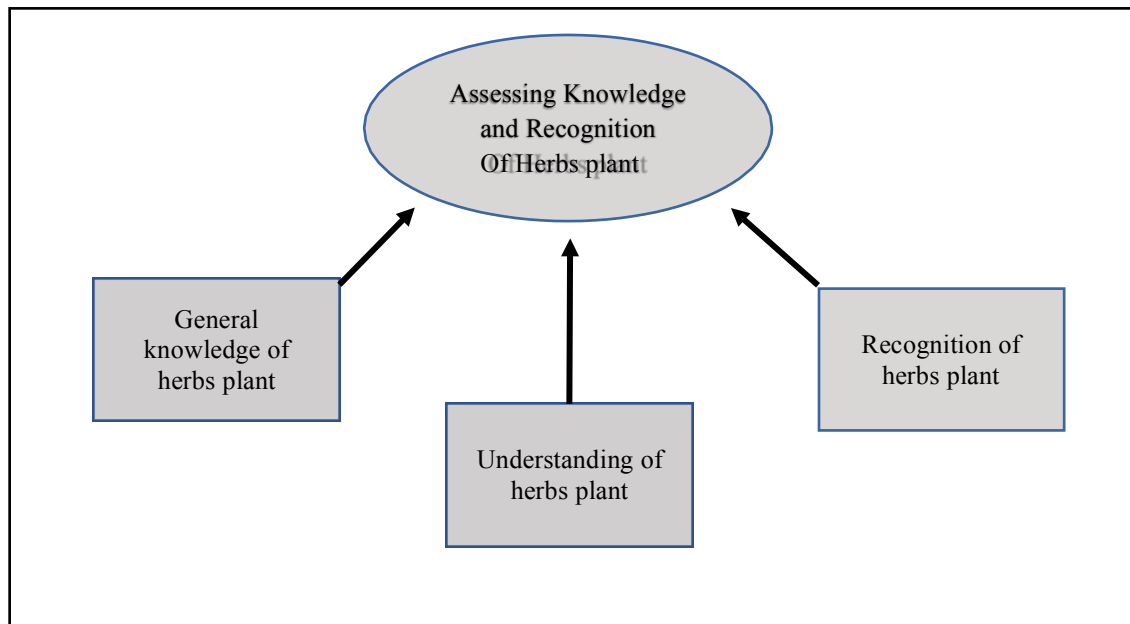


Figure 1: Research Design Model of Student Knowledge and Recognition of Herbs Plant

2.0 METHOD

2.1 Students

A total of 236 students from Foundation in Science Program (aged 18 years, n=236) at Centre of Foundation Studies, UiTM Cawangan Selangor Kampus Dengkil took part in the study. At the Centre of Foundation Studies, these students were selected based on their general knowledge of Biology during their secondary school years before enrolling the foundation program. Therefore they were assume to have knowledge about Malaysian herbs plant.

2.2 Preparation of questionnaire form

Sets of questions were drafted to Part A: Demographic, Part B: General knowledge of Herbs Plant, Part C: Understanding of Herbs Plant and Part D: Recognition of Herb's Plants. Likert scale 5-point were used for items in the questionnaires in Part B, Part C and Part D. The lowest points represent 'strongly disagree' whereas the highest point represent 'strongly agree' for knowledge and recognition on herbs plant. The response of knowledge and recognition towards herbs plant has been assessed on likert scale 5-points, where 1 indicates lowest level knowledge and recognition whereas 5 indicates the highest.

We have conducted pilot study throughout 24 students (Figure 2) and test reliability of items in questionnaire as shown in Table 1. Next the SPSS (Statistical Package for the Social Sciences Version 24) program was used to check the reliability of the questionnaires. Value of Cronbach's Alpha obtained that is above 0.70 indicate acceptable value (Singh, Abdul Ghani and Teoh, 2009).

Table 1: Reliability of items

<i>Construct</i>	<i>Cronbach's Alpha</i>
General knowledge of herbs plant (4 items)	0.702
Understanding of herbs plant (5 items)	0.773
Herbs plant recognition (20 items)	0.912



Figure 2: Pilot study conducted.

2.3 Data Collection and Analysis

Data collection was conducted by distributing questionnaire forms randomly to the 236 students (7 or 8 groups) from Foundation in Science program (academic session 2018/2019) at Centre of Foundation Studies, UiTM Cawangan Selangor Kampus Dengkil. Students were briefly explained about this research before answering the questionnaires. This to ensure, the students will give their consents and understand the objectives of the research. Pictures of 20 Malaysian herbs plants were also shown using LCD projector. The survey lasted for 30 minutes. Data were analyzed using SPSS Version 24.

3.0 RESULTS & DISCUSSION

A total of 236 students from Foundation in Science program responded in this study. The age of the students were 18 years old. From 236 students, 29.7% were male while 70.3% were female. Although the numbers of male students were not in equal ratio with female students, we accepted this data because in each group of the students (1 group= 30 students) in our campus is consist less than 10 male students.

In terms of ethnic group, 97% of the students were Malay, 0.8% were Bumiputera Sabah, 1.3% were Bumiputera Sarawak and 0.8% were Bumiputera Semenanjung. Therefore, as all of the students were Bumiputera, we were expecting to look at their perceptions towards recognition of herbs plant apart from looking at their knowledge about herbs plant.

Students participated in this study were mainly from urban (55.9%). Others were from village (25.8%), town (14.4%), others (3.8%). Study has shown that students came from all over the states with Selangor has the highest number of students that study in this program (19.5%) while other states has numbers of students that study in this program were less than 15% and below. Demographic characteristics of respondent are shown in Table 2.

Table 2: Distribution of respondent by demographic characteristics (n=236)

Characteristics	n	%
Gender		
Male	70	29.7
Female	166	70.3
Ethnic		
Malay	229	97.0
Bumiputera Sabah	2	.8
Bumiputera Sarawak	3	1.3
Bumiputera Semenanjung	2	.8
Location of the house		
Village	61	25.8
Town	34	14.4
Urban	132	55.9
Others	9	3.8
States		
Perlis	3	1.3
Terengganu	19	8.1
Pahang	21	8.9
Sabah	6	2.5
Sarawak	5	2.1
Wilayah Persekutuan Kuala Lumpur	5	2.1
Putrajaya	7	3.0
Kedah	14	5.9
Pulau Pinang	8	3.4
Perak	20	8.5
Selangor	46	19.5
Negeri Sembilan	11	4.7
Melaka	9	3.8
Johor	33	14.0
Kelantan	29	12.3
Household income		
< RM 500	7	3.0
RM 501 - RM 1000	19	8.1
RM 1001 - RM 2500	46	19.5
> RM 2501	164	69.5

In this study, we have investigated and assessed 3 components of levels to measure students' indigenous knowledge and recognition towards herbs plant. 20 type of herbs plant that were very commonly grown in Malaysia (Fuziah, 2012) were used in assessing students recognition towards it. Radar chart was used to represent the mean of 3 components from the survey.

Based on Figure 3, the first component measured was general knowledge of herbs plant (**mean=3.67, SD=0.83**). It shows that the majority of the students has moderate general knowledge about herbs plant. They know that the herbs plant is benefit in many ways such as food supplement, alternative medicine, as insect repellent etc. But we think that at the moderate general knowledge, some of them may not fully capable to recognise the herbs plant (shape of the flowers, leaves, stem etc). According to Kulip (2003) traditional uses among the Muruts is gradually disappear due to migration, restriction from religion, lost interest of younger generations and heavy dependence on modern medicine.

The second component measured was understanding of herbs plants. The **mean** was **4.00** and **SD** was **0.68**. This shows that most of the students have good understanding about herbs plants. They understand that if herbs plant was prepared in the right way for health care purposes, it is safe to be consumed. The students believe that older people is better in recognising herbs plant compare to them and the usage of herbs plant is cheaper compared to the supplement that been sold in the pharmacy shop.

Finally, the third component measured was herbal plant recognition. The **mean** was **4.03** and **SD** was 0.95. This shows that majority of the students were able to recognise these herbs plant. There were 20 common herbs plant which students need to identify in this research as shown in Table 3. These herbs plant were easily to be recognised as it can be found anywhere such as in the market or grow it at the house. In addition, from previous research, these herbs plants were recorded multiple times as medicinal plant by the bumiputera mainly Malay in remote the village in Perak (Ramli, Milow & Ong, (2015), Milow, Ghazali, Mohammad & Ong, (2011)) and in Terengganu (Ong, Nik Besar & Milow, (2011), Ong, Mat Zuki & Milow, (2011)).

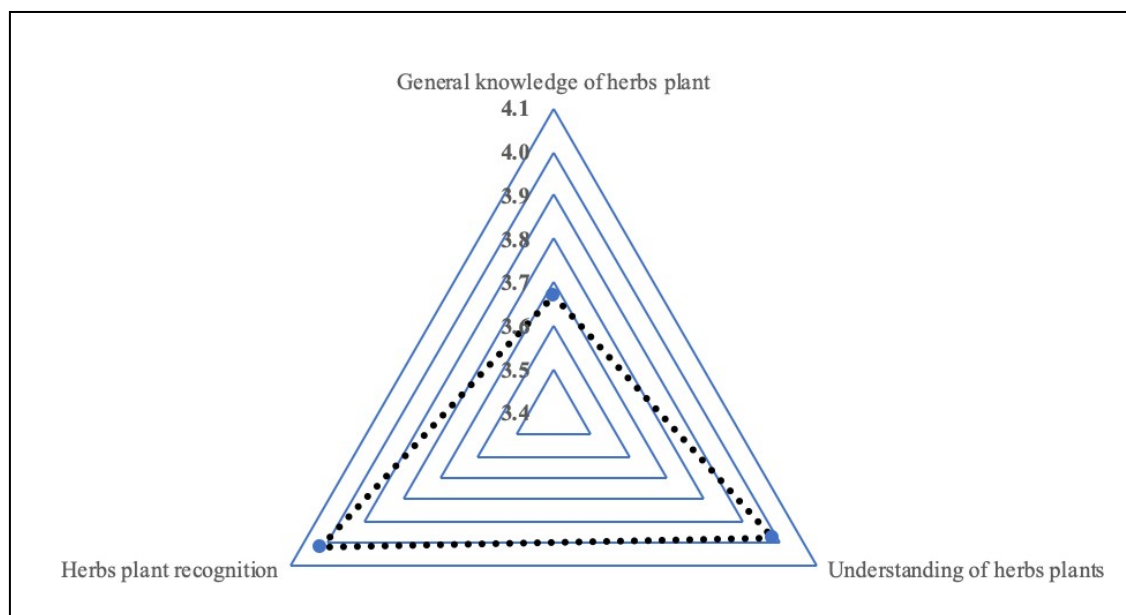


Figure 3: Radar chart for knowledge and herbs recognition among students from Foundation in Science program.

Table 3: 20 type of herbs plant

Herbs plant
'Pandan' / <i>Pandanus amaryllifolius</i>
'Serai' / <i>Andropogon citratus</i>
'Lengkuas' / <i>Alpinia galanga</i>
'Kari' / <i>Murraya koenigii</i>
'Kunyit' / <i>Curcuma longa</i>
'Kantan' / <i>Etlingera elatior</i>
'Cekur' / <i>Kaempferia galanga</i>
'Halia' / <i>Zingiber officinale</i>
'Sirih' / <i>Piper betle</i>
'Pegaga' / <i>Centella asiatica</i>
'Limau Kasturi' / <i>Citrus madurensis</i>
'Limau perut' / <i>Citrus hystrix</i>
'Limau nipis' / <i>Citrus aurantifolia</i>
'Pudina' / <i>Mentha arvensis</i>
'Mengkudu' / <i>Morinda citrifolia</i>
'Ulam raja' / <i>Cosmos caudatus</i>
'Kesom' / <i>Polygonum minus</i>
'Peria katak' / <i>Momordica charantica</i>
'Misai kucing' / <i>Orthosiphon aristatus</i>

This study has investigated 3 components assessment level of indigenous knowledge and herbs recognition among students of Foundation in Science program at the Centre of Foundation studies. Results revealed that the students (Bumiputera) have indigenous knowledge and able to identify the herbs plant with mean score of each component is more than 3.5.

Based on our finding, how to ensure that the future generations especially younger generation appreciate the value of our Malaysian herbs plant? It can be achieved by cooperation involving many parties. Awareness activities in Malaysia's primary and secondary schools on the usefulness of plants and their environment, and government policies on medicinal plants, is suggested towards the preservation of indigenous traditional knowledge of plants. An effort from Taman Botani Shah Alam (TBNSA) were appreciated as they created garden known as 'Laman Konservasi Herba dan Tanaman Ubatan TBNSA' Their objective was to ensure that the younger generation has opportunity to recognise the plants and learn its benefits (Berita Harian Online, 2017). The other suggestion to ensure the transfer of indigenous knowledge of herbs plant is by creating curriculum clubs. This will become a good platform of transferring of knowledge to the younger generation. Another innovative suggestion to preserve the indigenous knowledge is creating a unique database system. According to Sahri, Nordin and Harun (2012), the indigenous herbs knowledge representation and its implementation database was develop in Web Ontology Language (OWL) using Protégé 4.2. This will assure the indigenous herbs knowledge were organized and not scattered.

4.0 CONCLUSION

The case study shown that overall 236 students have indigenous knowledge and able to recognize the herbs plant. Further studies need to be carried out to assess student knowledge and recognition towards herbs plant involving non-science students and exploring level knowledge towards the herbs plant. With the cooperation of many parties, it is hope that the younger generation will appreciate the value of the herbs plant by learning the usage of the plants and applying it in their daily life.

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