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A Case Study of Orang Asli Indigenous Knowledge in Traditional Medicine

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Abstract

The practice of traditional healing is a continuous experience that has been part of national healthcare systems of Orang Asli (OA) societies for many years. Traditional medicine (TM) is part of OA Indigenous Knowledge (IK) and they use it from generation to generation for spirituality, health and longevity. However, these traditional medicinal specifically herbs and plants known to OA have become lessen due to the impact of deforestation, urbanization and modernization. In response to the issue, this case study, therefore, seeks to explore and document the existing IK regarding the OA's medicinal plants. In collecting qualitative data, this case study conducted in-depth interviews and field observations in a village of Mah Meri's tribe. The interviews were carried out with tribal elders in Mah Meri settlement in Selangor involving three informants aged 30 and above. The interviews were video and audio-taped, verbatim transcribed, analyzed and imported into Atlas.ti software for data processing. The key findings of the study indicated that the reported medicinal plants are generally used locally in TM to treat various health problems such as fever, coughs and cold ailments. It is also important to ensure that the plants grow in wild nature and have not been "poisoned" with pesticides. The contribution of the OA IK in TM to the corpus knowledge could be used for medical treatment, education and further research in indigenous medicine.

Keywords: Orang Asli, Indigenous Knowledge, Traditional Medicine, Mah Meri

Introduction

Malaysia is a country with different ethnicities; among them Malay, Chinese and Indians are the largest subpopulations while OA (Malaysian indigenous people) comprises only 1% of the population of Malaysia (Thevakumar et al., 2016). In Peninsular Malaysia, OA is estimated to account for around 13.9% of the 31 million population (IWGIA, 2017). There are three main tribal groups of OA namely Negrito (Semang), Senoi and Traditional Malay/ Proto-Malay with six different tribes in each main tribal groups (Azizana et al., 2016; Ong & Azliza, 2015; Ong, Faezah & Milow, 2012; Dentan 1979; Carey 1976) account for 205,000 or 0.84% of 24, 457, 300 the population in Peninsular Malaysia (IWGIA, 2017).

The Mah Meri or "Forest People" are one of the 18 tribes of indigenous people which community classified under a subgroup of Senoi who inhabits and lived in the coastal areas in south Selangor starting from Sungei Pelek in Sepang to Pulau Carey. They are also known as seamen because they live near to the sea and work as fishermen (JAKOA, 2017). There is no historical evidence that directly contradicted their origin, but they are believed to have migrated from the islands in the southern state of Johor to the beach for a run from the enemy. However, according to Dentan (1999) and Thevakumar et al., (2016) in their study state that the Senoi, which includes the Mah Meri, Semok Beri, Temiar, Che Wong, Jah Hut, and Semai, reached Peninsular Malaysia during the second wave of migration about 8000 years ago from South Asia, the mountain areas of Cambodia, Vietnam and Burma. Now, a total of 2200 Mah Meri community recorded until 2005 (JAKOA, 2009) and they have undergone a change in thinking and development results from mixing with other people.

IK is transmitted orally from generation to generation (Anyaku, Nwafor-Orizu & Eneh, 2015). It is comprehended to be the conventional learning of Indigenous people groups (Nakata et al., 2005). According to a definition provided by Siyanbola et al., (2012), IK generally alludes to the developed long-standing conventions and practices of certain territorial, indigenous, or neighbourhood groups and in addition the astuteness, learning, and lessons of these communities. In this preliminary study, the term 'IK' is utilized to depict the learning frameworks created by a community rather than the scientific knowledge that is, for the most part, alluded to as "present day" knowledge.

According to the World Health Organization (WHO) Traditional Medicine Strategy 2014-2023, TM is characterized as the aggregate of knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to various societies, regardless of whether reasonable or not, utilized as a part of the support of well-being and in addition in the anticipation, diagnosis, improvement, or treatment of physical and psychological sickness (Kang et al., 2017). TM is a subset of traditional knowledge (Wilder, 2000) and also an ancient medical practice which existed in human societies before the application of modern science to health. TM was also dismissed prompting the hindering of improvement of the indigenous system (Anyaku, Nwafor-Orizu & Eneh, 2015). Cited from (Karunamoorthi et al., 2013) in (Cotton, 1996) defined that TM alludes to any old and socially based human services work on contrasting from scientific medicine and is to a great extent transmitted orally by groups of various societies.

A study conducted by Ullah et al., (2013) stated that in third-world regions medicinal plants are preferred as a mode of treatment for diseases and many developing countries the majority of the population is dependent upon traditional medicine to meet its primary health care needs. According to Ong & Azliza (2015), the IK in TM is studied and used as a base in finding

the novel compounds to treat various diseases. Besides, has a long history of use in health maintenance and in disease prevention and treatment, particularly for chronic disease around the world. However, IK and usage of medicinal plants are decreasing due to various factors (Ong et al., 2012). It is protection and sharing of benefits have been under debate at both the international and domestic level for decades

Knowledge of medicinal plants is seldom recorded. Lack of clear custodianship, little comprehension of maintainable administration practices and knowledge of market prerequisites, combined with societal position and economic open doors for gatherers and deficient institutional structures, place natural habitats and populaces of medicinal plants at danger (Sher at el., 2015). In the study conducted by Gohil, Patel & Gajjar (2010) outlined that the growing number of herbal preparations in the market raised the possibility of inconveniences identified with the despicable utilization of these products, or the lack of medical supervision alongside with the probability of interactions with the drugs and herbs on synchronous utilize. Hence, the purpose of this study is to interviewing, recording and documenting Mah Meri tribe IK on medicinal plants as TM which is important before such knowledge or this age-old precious gift of nature to humankind at risk of being lost, diluted or disappears.

Therefore, the objectives of this case study were:

- i. To identify the IK by the Mah Meri regarding the types of herbs or plants that use for medicinal purposes.
- ii. To document the IK by the Mah Meri regarding the types of herbs or plants that use for medicinal purposes.

Methodology

A qualitative approach was employed in this case study by employing a data collected through in-depth interviews and field observations. This study was carried out among the Mah Meri tribes in Mah Meri community settlement named Perkampungan Orang Asli Sg. Bumbun, Pulau Carey which is located in the state of Selangor, in Peninsular Malaysia. Figure 1 below shows the location of the study site.



Figure 1. Maps of Mah Meri settlement at Pulau Carey, Kuala Langat, Selangor

The total population of the village was 450 people. These 450 residents were from 91 families staying in the village (Kunasekaran et al., 2013).

For this case study, the selection of the informants was made prior to the purposive sampling and interview protocol as the interview instrument. The protocols were developed through an intensive review of literature guided by the posted research question (Norwaliza & Ramlee, 2015). The snowballing technique is used to carry out this preliminary study. According to Kunasekaran et al., (2013); Cooper & Schindler (1998), snowball sampling means the researcher gets to know the following respondent from the previous respondent. One informant suggested the other individual whom he or she believed could contribute to the study and they were selected based on specific criteria considered knowledgeable about the traditional use of medicinal plants and their uses (Mahmoud & Gairola, 2013) targeting primarily older and experienced aged 30 years and above. They were interviewed using a set of the semi-structured interview as a tool to achieve the research objectives which included the questions on medicinal uses of plants. With the help from JAKOA officer and the headman (*Tok Batin*) from the settlement, then we were able to verify the sample that the informants knew the Malay language, and hence all interview was conducted by the researchers in the Malay language (Chin et al., 2017).

The interview began with a brief introduction of the team and the purpose for the study to gain the trust of the elder, which allowed them to talk more freely and openly as outlined by Sher et al., (2015) in their settlement to document their diagnostic knowledge for curing the diseases, and the medicinal plants and other raw material used in the treatments (Samal, Dhyani & Dollo, 2010). Othman (2006) examined that the interview method is very useful for inquiring about past events that people experience difficult to replicate again. In general, the majority of the informant had no problem answering that the questions during the interview as the Malay language spoken was simple and straightforward with no medical jargon and it took only one hour to conduct since there was no language barrier (Ahmad et al., 2013).

This study was conducted in May 2017 after the completion of the interviews and supplemented by direct observation and transect walks (Ngarivhume et al., 2015). Each medicinal plants in and around the village were shown by the informants during the transect walks. The whole interviews and observation process were first recorded in a notebook, video and voice recording device as field note and transcribed later. Photographs of every species of plants samples were also taken from the field observation for better identification and record (Prakash et al., 2014; Jain & Mudgal, 1999; Martin, 1995; Singh et al., 1989; Singh & Singh, 1985). Documents were thematically analyzed (Boyatzis, 1998; Bryman, 2012; Löfmarck & Lidskog, 2017) and imported into Atlas.ti software for data processing.

Results and Discussions

The tribes of Mah Meri utilize diverse plant resources for treating and curing various ailments. In this study, the data revealed the Mah Meri tribes still rely on traditional medicinal remedies as their primary source of medication for treating many ailments in their daily life. A total of 7 of different species with various uses was identified and reported the best therapeutic results for specific disorders. Out of the total number of medicinal plants, four species of medicinal plants been recorded during the interview and field observation were *Andrographis Paniculata*

(*Hempedu Bumi*), *Centella Asiatica* (*Pegaga*), *Phyllanthus Niruri* (*Dukung Anak*) and *Tradescantia Albiflora* (*Telinga Kera*) while another three species of plants were not found in the settlement.

***Andrographis Paniculata* (*Hempedu Bumi*)**

Andrographis Paniculata (fig. 2) or called as *Hempedu Bumi* by Orang Asli were also prescribed for snakebite. The informants believed that *Andrographis Paniculata* used in Mah Meri tribes TM for treating diabetes and hypertension. In other study conducted by (Ong, Ahmad & Milow, 2011) among the Malay villagers in Kampung Tanjung Sabtu, Terengganu, Malaysia found that decoction or infusion of the whole plant of *Andrographis Paniculata* taken orally was also to treat hypertension besides to cure diabetes and fever. Not only that, *Andrographis Paniculata* is also applied by Kani tribals in Kouthalai of Tirunelveli hills, Tamil Nadu, India to prevent the falling of hairs (Ayyanar & Ignacimuthu, 2005). This case study supported by Joselin and Jeeva, (2014) who writes that the *Andrographis Paniculata* is a traditional remedy for fever, cold and various infections and it has been perceived as safe in Traditional Chinese Medicine too. This is proven that *Andrographis Paniculata* was not only practised by Mah Meri tribe but also used by other communities locally and internationally.



Figure 2. *Andrographis Paniculata* (*Hempedu Bumi*)

***Centella Asiatica* (*Pegaga*)**

This study also found that Mah Meri tribes relied on *Centella Asiatica* (CA) commonly known as '*Pegaga*' (figure 3) to treat pain, fever, headache, and dizziness. Specifically, the whole plant is eaten raw or juices to treat various type of sickness such as threat poor eyesight, *bon* appetite and traditionally for wound healing (Ong et al., 2011). Pharmacological review of *Centella Asiatica* study conducted by Gohil, Patel & Gajjar (2010) stated that the present review is indicative of multiple useful clinical effects of *Centella Asiatica*, especially in the age-related cognitive decline.

It is a very important medicinal herb used in the Orient (Bown, 1995) which is also becoming popular in the West (Chevallier, 1996). Similarly, previous study found that *Centella Asiatica* (CA) was also used by the Orang Asli in Kampung Bawong, Perak, West Malaysia where the boiled *Centella Asiatica*'s leaves and the infusion is used for mother who just gives birth as one of their primary source of medication (Samuel et al., 2010). Interestingly, a study conducted by Ayyanar & Ignacimuthu, (2005) described that the Kani tribals in Kouthalai of Tirunelveli hills, Tamil Nadu, India mixed the paste of *Phyllanthus virgates*' leaf with the leaves of *Centella Asiatica* to cure jaundice and stomachache.



Figure 3: *Centella Asiatica* (Pegaga)

***Phyllanthus Niruri* (Dukung Anak)**

Figure 4 shows the recorded image of *Phyllanthus Niruri*, which popularly known as *Dukung Anak* among Mah Meri tribes. They used the plants pounded, mixed with water taken orally to treat diarrhoea and stomach ache. Meanwhile, the roots are boiled and infusion is used to treat Jaundice which is almost similar to the research conducted by Ong et al., (2011) among the Malay villagers in Kampung Tanjung Sabtu, Terengganu, Malaysia. In the same vein, Samuel et al., (2010) in his study found that majority of the Orang Asli, of Kampung Bawong, Perak, West Malaysia used a decoction of the whole plant of *Phyllanthus Niruri* to cure jaundice. Experimental and clinical studies performed by Boim, Heilberg & Schor (2010) have produced interesting and hopeful data concerning the potential therapeutic use of *Phyllanthus Niruri* to treat and/or to prevent the stone formation or elimination.



Figure 4: Phyllanthus Niruri (*Dukung Anak*)

Tradescantia Albiflora (*Telinga Kera*)



Figure 5: Tradescantia Albiflora (*Telinga Kera*)

Based on the interview session with the informant, Tradescantia Albiflora (*Telinga Kera*) are normally used Mah Meri tribes to cure Kidney disease. There nothing much information about Tradescantia Albiflora among Mah Meri tribes recorded during conducting this study. However,

in an investigation into *Tradescantia Albiflora*, Wang et al., (2016) found that *Tradescantia Albiflora* has been used for treating gout and hyperuricemia as folklore remedies in Taiwan. Whereas, Park, Chow & Anderson (1996) investigated that *Tradescantia Albiflora* helps protect photosystem II against light stress. The photographs of *Tradescantia Albiflora* was recorded as shown in Figure 5 above.

Another three species of medicinal plants was not recorded by the researchers were *Kendur Urat*, *Lebap* and *Pokok Milik*. These species of plants were found growing locally. The use of *Kendur Urat* is used to treat fever and reported as a coolant as well. *Lebap* widely used in Mah Meri tribes to ease eyesore. Meanwhile, the traditional use of *Pokok Milik* reported to *bon* appetite especially kid while unwell as outlined by one of the informants as well as traditional medicine practitioners.

Generally, the plants were often used by most of the informants for the same purpose and these reported medicinal plants were in use for a long time by the Mah Meri tribes to treat various health conditions and were used to treat both children and adults. This case study was also found that Mah Meri tribes in this study area are relying on medicinal plants to treat their ailments and not depending on modern medicine provided by hospitals and rural clinics.

Conclusion

From time to time, the role of traditional medicine has been dwindling with the emergence of modern ways of diagnosing and treatment of diseases. Traditional medicinal plants in the study area are under stress due to anthropogenic activities including terroristic activities, deforestation and overgrazing. Records and publishes of OA (Mah Meri tribes) traditional knowledge on medicinal plants with worldwide distribution, as a potential agent and represent a useful starting point can be interesting for further research on novel chemical compounds and potentially useful drugs for modern medicine to treat various types of illness. This statement was supported by the study conducted by Stephen & Comac (2000) indicated that extracts of *Andrographis Paniculata* may have a potential for interfering with the viability of the Human Immuno Deficiency Virus (HIV) and advised that *Andrographis Paniculata* could combine with modern medicines against Acquired Immuno Deficiency Syndrome (AIDS).

It is to our common knowledge that TM is very important particularly to the poor and those living in remote and hard to reach areas with little or no access to modern health care services. This showed that the important to us to sustain and preserve the traditional knowledge of medicinal plants before it becomes diluted or neglected. It is necessary to document the IK and protect such medicinal importance species for future prospective and generations before such knowledge becomes diluted or disappears. The difficulties of sustainability in the twenty-first century made a move in demeanour toward perceiving IK as equivalent to different types of knowledge, as well as essential to being comprehended and incorporated into the worldwide assortment of knowledge for the advantage of all mankind (Rudolph, 2012). Further studies can be done by interviewing more informants from certain Orang Asli settlements in others state to compare the different uses for each plant species.

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