

# Chapter 5

## The Intersection of Kedayan Folk Medicine and Traditional Ecological Calendar



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**Abstract** A noteworthy feature of folk and codified traditional medicines is their ability to combine drug-based therapies with spiritual therapies. This unique combination differentiates them from the drug-based approach employed by modern biomedicine and renders them highly relevant to contemporary healthcare. Like folk medicine, traditional ecological calendars also embody the traditional knowledge held by local communities. However, the influence of ecological calendars on folk medicine has been largely underexplored; studies have mostly considered ecological calendars and folk medicine independent of each other. In this chapter, we provide an understanding of the traditional knowledge of the Kedayan community of Brunei Darussalam with specific reference to their folk medicine and their traditional ecological calendar. Data was collected through in-depth interviews that the first author held with sixteen knowledgeable elders from the Kedayan community of Brunei Darussalam between January 2018 and June 2018. The Kedayan classify causes of ailments broadly into two: ailments caused by factors of the unseen realm and factors of the seen realm. The former are treated by spiritual therapies and the latter using practices rooted in the humoral concept of well-being. The Kedayan traditional ecological calendar stipulates the right time for harvesting medicinal herbs and administering them. It links the potency of medicinal herbs to tidal cycles and also provides information on the seasonal occurrence of ailments. By focussing on the interface between the Kedayan folk medicine and the ecological calendar, the chapter draws attention to a hitherto underexplored area in folk medicine.

**Keywords** Traditional medicine · Humours · Healing · Medicinal plants · Post-Partum care

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## 5.1 Introduction

Formal science and traditional knowledge are often seen as two contrasting types of knowledge (Herbert 2000). Formal science is considered open, systematic and real, while the latter is considered as closed, unsophisticated, unintellectual, primitive and emotional. Thus, formal scientific knowledge is widely accepted and predominantly perceived as the whole idea of modernity, while traditional knowledge (TK) is either viewed as a traditional and backward way of life or as product of mere trial and error. In the context of poor and marginalised communities, traditional knowledge provides considerable benefits over western science as it is applied in the everyday life of the community (Davies 1994; Kallard 2000). It provides locale-specific information about trees and plants that grow well together, plants that serve as an indicator of soil quality, or the changing of seasons and local weather patterns (Dixit and Goyal 2011). It also serves as the basis for decision-making at the local level in agriculture, food preparation, education, natural resource management and healthcare. Studying traditional knowledge provides an insight into how people have used and depended on the environment as well as its resources (Veitayaki 2004).

Healing is one of the most important applications of traditional knowledge. Traditional codified medicine was popular as early as 1600 B.C. among Syrians, Babylonians and ancient Hebrews (Edae et al. 2017). In India, the earliest reference of the use of plants for medicinal purposes appears in Rig Veda, which is said to be written between 1600–3500 B.C. (Prakash and Gupta 2005). By the end of the twentieth century, most of the population in developing countries were still relying on traditional codified and folk medicines to meet their primary healthcare needs (Balick and Cox 1996; Etana 2010; Setswe 1999). Contrary to modern biomedicine, folk and codified traditional medicines employ a combination of spiritual and drug-based healing approaches (Edae et al. 2017; Franco and Narasimhan 2012). In folk medicines, herbs and other remedies are used to treat infections, disorders and physical injuries, while rituals, counselling and folk wisdom are used to enhance spiritual well-being (Kamsani et al. 2020). Thus, folk medicines aim to promote mental, physical and spiritual well-being in a holistic way, characteristic of the respective cultures (Coleman 1996; Kibebew 2001).

Although folk medicine is associated with the beliefs of the community, the underlying knowledge is not widely dispersed throughout the community. Rather, it is concentrated in the hands of folk healers who have painstakingly conserved and put it into practice on a daily basis (Kamsani et al. 2020). In addition, folk medicines usually lack written texts. Thus, folk healers play a crucial role in local healthcare by virtue of being the living repositories of medicinal knowledge. Pretorius (1999) defines a folk healer as someone who is recognised by the community for her/his competence in providing healthcare by using plants, animals and other mineral substances. Their way of treating patients is holistic, dealing with the physical and psychological aspects of a disease. Folk healers often specialise further, focussing on certain aspects of healthcare such as injuries, poisonous snakebites, skin ailments, fever, allergies, diarrhoea, stomachache, etc. (Tapan 2014).

Procurement of resources from the environment (including plants used in folk medicine) requires specific knowledge on the habitats where they are found, and the appropriate time to collect. Yet, overharvesting of these could lead to depletion. This is prevented by customary laws and taboos that regulate access to and withdrawal of resources. The phenology of plants and animals, their habitats, cultivation of crops and medicinal plants are all locale and time-specific knowledge embedded in the traditional ecological calendars (Franco 2015). In Northern Australia, diverse sets of traditional ecological calendars are used to make decisions related to gathering wild edibles, hunting, fishing, etc. (Woodward et al. 2012). The farmers in the South-western Free State of South Africa also use traditional ecological calendars to forecast weather phenomena and undertake agricultural activities (Zuma-Netshiukhwi et al. 2013). Ethiopians are known to rely on a seasonal calendar to predict the availability of medicinal plants. The month of *pagume* in the Ethiopian calendar is considered to be the best time to collect medicinal plants. Marking a specific month of the year for medicinal plant harvest perhaps prevents the overharvesting of medicinal plants (Mesfin et al. 2009). The importance of calendar and time in healing is not limited to predicting the seasonal availability of medicinal plants. Healers might consider certain days as auspicious days to treat ailments. Discipleship, which is an important means of transmission of knowledge in folk medicine, might also depend on the prediction of auspicious timing (Franco and Narasimhan 2012). Most studies dealing with ecological calendars, however, have focussed on the seasonal availability of natural resources and climate change mitigation; their relevance in folk medicine has been overlooked. Thus, this research was conceived to understand the interface between folk medicine and the traditional ecological calendar. We collaborated with the Kedayan community in Brunei Darussalam to document their folk medicine and their ecological calendar with the following objectives:

- (a) To understand the philosophical basis of the Kedayan folk medicine; and
- (b) To elucidate the interface between the Kedayan folk medicine and ecological calendar.

## 5.2 Research Methods

### 5.2.1 Study Design

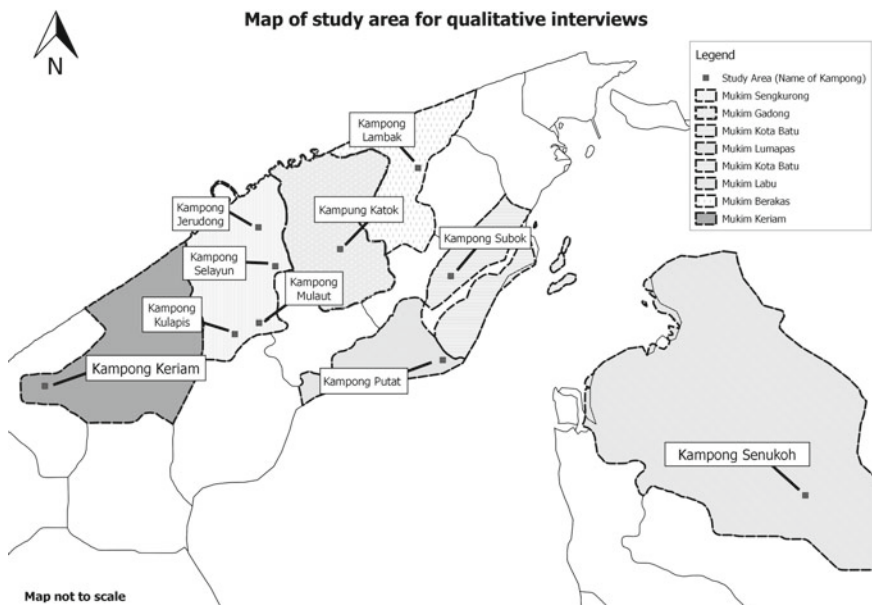
This study employs a qualitative approach. We used in-depth interviews carried out in a conversational style, to elicit information on the Kedayan folk medicine and traditional ecological calendar. New knowledge is obtained through in-depth conversations between the interviewer and the interviewee on the theme of interest (Kvale and Brinkmann 2009). Hiatt (1986) considers qualitative research as a method of discovering and understanding the experiences, perceptions and thoughts of knowledge partners. As qualitative research is aimed at generating rich data, it relies heavily on purposive sampling (Patton 1990), where the researcher chooses the knowledge

partners on the basis of their presumed expertise/in-depth knowledge/experience on the topic under investigation (Bernard 2002; Lewis and Sheppard 2006).

### 5.2.2 Location and Area of Study

The study was carried out in Brunei Darussalam from January 2018 to June 2018 in collaboration with the Kedayan community. According to the Preliminary Report of the Population and Housing Census (2011), the Kedayan population of Brunei Darussalam in 2011 was 23,720, of which 12,291 (51.8%) were males and 11,429 (48.2%) were females (Fig. 5.1).

A total of sixteen ( $n = 16$ ) community members purposively sampled on the basis of their reputation for possessing TK related to folk medicine and calendar participated in the study. We refer to them as ‘knowledge partners’ to recognise their contribution to the study in the form of TK. In the past, the Kedayan were either farmers, hunters or fishermen—all occupations dominated by the male folk. Thus, most of the knowledge partners we could identify were male ( $n = 13$ ; female  $n = 3$ ). The knowledge partners were community elders ranging from approximately 40 to 95 years of age and six of them were healers (male  $n = 5$ ; female  $n = 1$ ). Results were organised on the basis of the following themes: concept of health and well-being,



**Fig. 5.1** Map of the study area for qualitative interviews

causes of ailments, methods and the synergies between the Kedayan folk medicine and their traditional ecological calendar.

### 5.2.3 *The Kedayan Community*

The term ‘Kedayan’ is defined in *Kamus Dewan* as an ‘escort’ or ‘slave’ (Noresah 2005: 702). This term is often linked with the life of the community during the feudal era as escorts to the king. Many scholars have attributed a Javanese origin to the community, relying on oral history (Bantong 1984; Shariffuddin 1969). It is widely said that Sultan Bolkiah (1473–1521 A.D.), the fifth Sultan of Brunei was impressed by the green rice fields he visited in Java and decided to bring a few Javanese rice farmers to Brunei to initiate paddy cultivation. Syair Awang Semaun, an epic poem suggests that the Kedayan came to Brunei in the fourteenth century. When the prince of Java, Raden Ang Suka Dewa lost in cockfighting to the first Sultan of Brunei Awang Alak Betatar (1363–1402 A.D.), he had to surrender his Kedayan sailors to the Sultan of Brunei as a reward (Hasan 2008; Rahim 1992; Sablee 1994). This formed the basis for interpreting the meaning of Kedayan as an escort of the king. However, Druce (2020) argues that the Kedayan community originated in Borneo, and in the past, the Barunay (Brunei Malay) and the Kedayan should have formed a single homogenous group. The fact that both Kedayan and Brunei Malay languages share high similarities (Clynes 2001; Nothofer 1991; Rosinah 2007), is cited in favour of such argument.

The Kedayan initially practised their indigenous folk religion (Ramlee 2006). Later, they began following Hinduism, Buddhism and Islam (Osman 1989). The Kedayan conversion to Islam is believed to have occurred in the late fifteenth century (Harrison 1972; Ramlee 2006). The Kedayan traditionally practised agriculture (Shariffuddin 1969), fishing, hunting and gathering jungle products (Ramlee 2006). During the Japanese invasion of 1941, the Kedayan of Brunei contributed to local food security by prospecting naturally available plant resources such as *Nypa fruticans* Wurmb to produce famine foods (Franco and Bakar 2020). In contemporary Brunei, the Kedayan have diversified into various occupations brought in by the oil and gas-based economy (Maxwell 1996).

## 5.3 Results and Discussion

This section is divided into two: the first Sect. 5.3.1 deals with the Kedayan folk medicine where we discuss the findings related to the Kedayan understanding of ailments, ailments caused by factors of the unseen and seen realms and the associated healing practices, the philosophical basis of Kedayan folk medicine, humours and medicinal plants. In the second Sect. 5.3.2, we focus on the intersection of Kedayan

folk medicine and their ecological calendar, where we examine the influence of the ecological calendar on Kedayan folk medicine.

### 5.3.1 *Kedayan Folk Medicine*

#### 5.3.1.1 **Kedayan Understanding of Ailments**

Folk healers of the Kedayan community are known by the term *orang pandai* which is translatable into ‘knowledgeable person’. The term is commonly applied in contemporary Brunei Darussalam to refer to folk healers irrespective of ethnic background. The *orang pandai* are healers who have harmonised their indigenous beliefs with that of Islam to avoid cultural conflicts (Roseberg 2017). They are culturally described as folk healers who are skilled in conducting rituals and prayers to obtain harmony and blessings. The term *orang pandai* appears to be non-controversial and is an acceptable term for healers who used to be known as *bomoh* decades ago (Roseberg 2017). It is widely believed in Brunei Darussalam that the practices of *bomoh* deviate from the teachings of Islam, while those of *orang pandai* do not (Muller 2018).

In Kedayan folk medicine, a person is considered healthy if he or she has the capability to perform routine work. According to our knowledge partners, the understanding of good health and ill health in the past was quite different from now. People’s conceptualisation of health in the past was the state of being free from any ailments including those attributable to the influence of factors of the unseen realm, often involving ‘witchcraft’. At present, the concept of ailments has evolved to encompass several ‘modern ailments’ such as diabetes, high blood pressure, etc. caused by lifestyle changes. From the findings, we understand that people’s conceptualisation of health does not only focus on the physical condition, but is also linked with the mental well-being of an individual. The findings reveal that according to the Kedayan beliefs, the world comprises of *alam halus* (unseen realm) and *alam kasar* (seen realm). Accordingly, human ailments are caused by two major factors: (i) *punca halus* (factors of the unseen realm) and (ii) *punca kasar* (factors of the seen realm). Irun (2005: 10, 27) also reports these two categories, while Roseberg (2017: 80) reports the categorisation as usual (*biasa*) and unusual (*luar biasa*) ailments.

#### 5.3.1.2 **Ailments Caused by Factors of the Unseen Realm (*Punca Halus*)**

For the Kedayan, certain ailments are caused by forces such as *jinn*, evil spirits, failure to observe taboos or casting of evil spirit (*pantak* or *sihir*). Similar to the experience of the Brunei Malay community (Roseberg 2017), much of the present-day Kedayan beliefs related to ailments caused by factors of the unseen realm appear to be a hybridisation of Kedayan indigenous beliefs and Islamic ones. The Kedayan believe that spirits have existed since the beginning of human history, and they define them as ‘creatures that live in the unseen realm’ (Moeliono 1988; Noresah 2013).

Their beliefs today, are in sync with the Islamic concept of *jinn*. Consequently, they draw a distinction between *jinn* and *iblis*. In Arabic, the word *jinn* refers to something that is concealed and hidden. According to Leaman (2006), the *jinn* are a part of divine creation, but share certain qualities with humankind, like intellect, discrimination and the capacity for freedom even though they are separate from humanity and angels (Glasse 1989). They also live among humans and in unhygienic places such as bathrooms, graveyards, slaughterhouses, rivers and ponds (Limenh et al. 2015). *Jinn* are also considered capable of making themselves visible, often presenting themselves in the form of an animal such as a cat, a dog (black), a donkey, a scorpion, a bird, a goat, or a snake (Ameen 2005; Lebling 2010). Unlike *jinn*, the concept of evil spirits comprises the devil (*iblis*) and *shaytan* (satan). Ibn (2008) states that whoever prefers to disturb *jinn*, humans and animals are called Satan.

Ailments caused by factors of the unseen realm predominantly occur when someone wanders outside the house or sleeps during *maghrib* (sunset prayer/dusk). For the Kedayan, it is traditionally forbidden to sleep between *asar* (afternoon prayer) and *maghrib* (sunset prayer) prayers. They believe that the spirits are at the peak of their strength during this time, rendering situations conducive for them to possess a victim. According to the healers, the spirits look for opportunities to enter human bodies, especially those who have weak souls (*lemah semangat*). They can enter the human body assuming various ethereal forms such as monkey, tiger, pig, *pontianak* (female vampiric ghost), or Satan (*iblis*) to possess them. These spirits typically enter the human body through orifices such as private parts, mouth, ears and sometimes through the umbilicus (navel), inflicting both physical and mental ailments. Hence, for the Kedayan, it is important to cover one's private parts and navel while sleeping.

For the Kedayan, the *jinn* are benevolent spirits, while the *iblis* are evil. The *iblis* are capable of causing trouble anytime, while the *jinn* do not harm humans unless disturbed. Disturbing a *jinn* could lead to various ailments. Failure to observe taboos such as entering a forest without asking 'permission' from the tutelary *jinn*, felling trees that are guarded by a guardian *jinn*, and purposely desecrating the abode of *jinn* would lead to ailments that can only be cured by a healer. One of the knowledge partners described an instance of *keteguran*, the ailment that befalls people who violate guardian spirits of particular localities:

*I once treated a Filipino patient...He had urinated over a place that had its jinn (caretaker of the place). Once he got home, he felt very sick and his body felt heavy until he was brought to me to be treated. When I looked at him, there was 'something' (spirit) hanging around his body, and now he's fully healed after being treated by me.*

The above statement establishes the disturbance of a *jinn* as the cause for *keteguran*. However, by choosing the example of a foreigner, our knowledge partner also underlines the need for being aware of local customs and beliefs. Patients suffering from *keteguran* show symptoms of fever, which cannot be cured through modern biomedicine.

Ailments could also be caused by evil spirits cast by an enemy (*pantak* and *ranggau*). Our knowledge partners report that such ailments are rare to come by these days.

### 5.3.1.3 Healing Ailments Caused by Factors of the Unseen Realm (*Punca Halus*)

The healing practice for ailments caused by factors of the unseen realm focuses on restoring the spiritual health of an individual for which the healer conjures benevolent spirits using rituals that are in harmony with the Islamic faith. Treatments for afflictions caused by factors of the unseen realm include exorcism. The healer first examines the patient to understand the kind of spirit that entered his/her body. Evil spirits or *jinn* with hideous faces are non-Muslim in nature and have to be converted to Islam prior to the treatment. The healers find it easier to deal with evil spirits that had invaded the patient's body, than those who have not. The healer can thus initiate a dialogue and probe into the reasons for entry into the person, the origin of the spirit and its requirement, before warning it and casting it away.

Exorcism involves the application of medicinal plants and an appeal to spiritual forces (Qur'anic verses). One of the knowledge partners uses *bidara* (*Ziziphus mauritiana* Lam.) leaves and coarse salt during the exorcism; the leaves are applied in odd numbers. *Bidara* leaves are used for bathing along with the recital of proper prayers. It is also believed that both evil spirits and *jinn* are afraid of *bidara* plants, and hence it is advisable to eat the fruits of *bidara* to prevent any disturbance from them. The function of the coarse salt here is to neutralise the negative energy from the patient's body when the exorcism is carried out. According to an 87 years old knowledge partner, *keteguran* is cured by *mandi bertawari* (the act of reading Qur'anic verses on water) or bathing during incantation and reciting prayer over the patient. Holy water will be provided to drink and nausea would then indicate the presence of evil spirits or *jinn* in the body.

Healers find it difficult to perform an exorcism when the patient is a female on her menstrual cycle. Evil spirits or *jinn* are believed to be attracted to women who are not 'clean' and thus refuse to leave the patient's body. Such experiences are commonly associated with the *pontianak* (female vampiric ghost). There are abstinences to be followed post-healing such as: avoiding staring at the mirror for too long, avoiding ornaments that chime, whistling, and sleeping between *asar* (afternoon prayer) and *maghrib* (sunset prayer) prayers. Failure to adhere to these would attract the spirits back to the body. Interestingly, consumption of wild game such as deer, mousedeer, etc. should also be avoided as they are believed to belong to the caretaker *jinn* of the forests. Post healing, coarse salt is sprinkled around the house to protect the house from the re-entry of the spirit. Such an act should not be done during *maghrib* prayer and care should be taken not to look back while sprinkling the salt. To protect individuals against spirits and poisonous wild beings (snakes and scorpions), *mali mali berduri* (*Lea indica* (Burm.f.) Merr.) is recommended to be planted in the home garden. *Talimpanas* stalks can also be used to repel wild and poisonous animals. To protect oneself from the disturbance of evil spirits and *jinn*, species of *talimpanas* (*Goniiothalamus* spp.) can be used as an amulet. The belief in the magical power of *Goniiothalamus* spp. has also been reported from the Dusun community of Brunei Darussalam (Kamsani et al. 2020; Voeks and Nyawa 2006).



### 5.3.1.4 Ailments Caused by Factors of the Seen Realm (*Punca Kasar*)

Most ailments in this category arise due to the disobedience of cultural norms that are meant to help humans live in harmony with nature. Such causes of ailments described by our knowledge partners are as follows:

- (a) **Infectious agents:** Ringworm, *huntut* (swelling), *sekalur* (pain in the feet), various types of fever locally categorised into *demam panas*, *demam kura*, *palih* and *senudong*, and *sawan* (seizures) in children fall into this category. The Kedayan believe that these ailments originate due to the violation of cultural norms such as having skin contact with an infected person. These ailments are thus capable of being transmitted from one person to another. Such cultural norms are part of the human behavioural immune system meant to minimise the spreading of infectious ailments through proximity, and are commonly observed in collectivistic societies (Schaller 2011; Schaller and Park 2011).
- (b) **Change in foodways:** According to one of our knowledge partners, change in dietary practices and food culture explains the difference in the nature of the ailments experienced by the people in the past and present. People in the past did not eat sugary and salty foods, hence ailments such as diabetes and high blood pressure were uncommon to them. Whereas, at present, the intake of such foods has increased, leading to the emergence of ‘new’ ailments such as high cholesterol, diabetes, high blood pressure, kidney failure, heart attack, etc.
- (c) **Change of season:** Several ailments, predominantly common cold and cough, are often attributed to seasonal changes, especially during the flowering season that precedes the fruiting season.
- (d) **Postpartum disorders:** It is believed that new mothers experience a mix of physical and emotional changes if they do not follow the stipulated abstinence (food restriction and certain practices) after childbirth during the confinement period.
- (e) **Angin or wind and tide of the ocean:** Hernia in children locally known as *burut* for male infants and *buntal-buntalan* for female infants is believed to be caused by *angin* (wind). This is discussed further in Sect. 5.3.1.5.

### 5.3.1.5 Healing Ailments Caused by Factors of the Seen Realm (*Punca Kasar*)

The Hippocrates corpus espouses the humoral approach to human well-being (Javier 2014). According to the humoral approach, the human body is comprised of four humours (fluids), viz. phlegm, blood, yellow bile and black bile (Bhikha and Glynn 2017). A proper state of health requires a balance of these humours within the human body (Bhikha and Glynn 2017; Bujalkova et al. 2001; Javier 2014; Kalachanis and Michailidis 2015). The humours are linked with the four fundamental elements of the ‘natural world’, viz. fire, air, water and earth. Phlegm is related to water, blood with air, yellow bile with fire and black bile with earth. This belief is also widely

shared by the medicines of the Malay Archipelago (Hart 1969). In line with the view of Hippocratic corpus, medicines of the Malay Archipelago advocate that the proportions of humours in a human body define human temperament, giving rise to hot, cold, damp or dry constitutions (Hart 1969; Kalachanis and Michailidis 2015; Kushner 2013).

The Kedayan recognise human constitution as either 'hot' (*panas/hangat*), 'cold' (*sajuk/dingin*) or 'normal' (*selulu*). Like most humoral medicines (Bhikha and Glynn 2017), the Kedayan approach to healing rests on balancing the 'hot' and 'cold' nature by employing contraries. An overtly hot nature is balanced by prescribing cold medicinal formulations, and vice versa (Aamir 2018; Bhikha and Glynn 2017; Kushner 2013; Tuschinsky 1995). It is noteworthy that the imbalances could also result from food, weather and other routine activities (Tobyn 1997). Thus, an appropriate diet is an integral part of any healing process. In the following paragraphs, we provide examples of fever, post-partum healthcare and hernia to illustrate the Kedayan approach to healing diseases due to natural factors by employing contraries.

The Kedayan recognise infections, change in foodways, change of seasons and child delivery as natural causative factors of ailments. These factors alter the 'normal' nature of the human body—a view, as mentioned earlier, shared by the medicines of the Malay Archipelago (Hart 1969; Manderson 1987; Tuschinsky 1995). For instance, fever is caused by infections and change in season, which renders the human body 'hot'. To restore balance, the Kedayan healers administer *pandingin* as a contrary. *Pandingin* (*Bryophyllum pinnatum* Kurz.) is believed to possess cooling properties and thus prescribed to relieve headache and reduce body heat.

Post-partum ailments are treated similarly. Many cultures stipulate post-partum confinement periods to restore the health of the new mother (Dennis et al. 2007). The Kedayan believe that after childbirth, new mothers enter a state of 'cold' as they lose 'hot' blood during delivery. Hence, cold foods including certain fruits and vegetables, and chilled drinks are forbidden for new mothers. There are also restrictions on women's movement as well as confinement practices to be followed for 44 days. Strenuous household chores such as lifting heavy materials should be avoided during this period. The Kedayan believe that new mothers experience physical and emotional changes if they do not follow the stipulated abstinence (food restriction and other taboos). During the 44 days post-partum period, her body balance must be restored by the addition of heat both internally and externally. This can be achieved by consuming hot food such as warm chicken soup and anchovies with ginger. The chicken soup is believed to enhance digestion, circulation and metabolism, while anchovies are great sources of protein, low in calories, high in omega and fatty acids, also an excellent source of calcium. Ginger helps to warm the body of a new mother. New mothers also practise '*berdiang*' where warm charcoal is placed near their stomach to heal the internal injuries. This practice bears similarities to *yu fai* (mother-roasting) practised by local communities in Laos, where bamboo beds of new mothers are heated with hot coals placed underneath (Sychareun et al. 2016).

The cold nature of new mothers results in their 'melancholic' state. To restore mental health during the post-partum period, Kedayan healers prescribe a traditional massage for the new mother. This helps in reducing post-partum depression, anxiety

and fatigue, restoring tense or inflamed muscles, joints and nerves in the pelvic region and improving lactation. In addition, the massage promotes good sleep. The Kedayan healer would also prescribe 'hot' medicinal plants mixtures to rectify the 'cold' nature of mothers. For example, the concoction of medicinal plants such as *sambung* (*Blumea balsamifera* (L.) DC.), *ringan-ringang* (*Flemingia strobilifera* (L.) W.T.Aiton) and *kuduk-kuduk* (*Melastoma malabathricum* L.) is used to bathe the mother on the 3rd, 7th, 14th and 44th day after giving birth. Mothers in post-partum confinement should also avoid exposure to wind and cold. The belief that new mothers enter a 'cold state' is also shared by various other cultures that use a humoral approach to healing including Amazonian, Chinese, Hmong, Laotian and Burmese cultures (Chien et al. 2006; Morrow 1986; Piperata 2008; Sein 2013; Sychareun et al. 2016). A central theme in these medicines is the focus on restoring the mother's body to a normal state of health through the use of contraries.

Hernia (*burut* and *buntal-buntalan*) is another disease that is treated by the Kedayan healers using contraries. The Kedayan associate *angin* (wind) and tides as the causative factors of hernia. The exact causation factor is determined symptomatically. Hernia caused by *angin* (*burut* and *buntal-buntalan*) is diagnosed by a 'wind' sound in the abdominal part of the infant. Treatment employed involves the application of lime chalk to the tip of a nail (fastener) and rubbing it on the infant's abdominal part. Hammering the nail (fastener) into the wood, following this treatment is believed to shift the focal point of the disease from the infant to the wood. Another method involves using a spoon to remove the 'wind' by stirring it in the painful area, accompanied by a recital of prayers.

Hernia associated with tides is diagnosed by the symptoms of swelling and foaming at the abdominal region of infants which is similar to the characteristics of high tide. Crushed betel nuts (*Areca catechu* L.) are chewed to a smooth paste and wrapped around the infant's stomach for three days in a row. The Kedayan believe that betel nuts are 'hot' in nature, capable of countering 'cold' hernia. There are also abstinences to be followed by the healer when healing hernia; people other than the infant and their mother are not allowed to witness the healing procedure. Also, the healing process cannot be conducted during high tide. According to Roseberg (2017: 92), the term *angin* is used by Brunei Malays and Kedayan as a metaphor for 'spirits'. The application of lime and hammering of nail all tend to concur with Roseberg's observation. However, none of our knowledge partners interpreted *angin* as a supernatural factor.

### 5.3.1.6 Prophets and Medicinal Plants

One of our healers narrated a folktale. According to him, a prophet named Astaqim was murdered, and all of his body parts were cut and dispersed over hills, water and flat land. Those that were dispersed over flat land grew into medicinal plants. The bitter taste of the medicine is the bile (*hempedu*) of prophet Astaqim. Thus, for the Kedayan, there are various guardians of medicinal plants. Medicinal plants on the hills are watched over by the prophets Alias and Yunos, while the guardian of

medicinal plants on flat land is prophet Astaqim. Medicinal plants that grow in or near water bodies are guarded by prophet Hailir. Hence, it is important to greet the respective prophets first by mentioning their names before harvesting the medicinal plants. This act of seeking permission is known as *menjunjung*. All the procedures and precautions mentioned by the knowledge partners on how to harvest the medicinal plants are similar to those reported by Irun (2005).

There are proper conducts on how to plant and harvest medicinal plants for healing purposes. While planting or sowing, the planter is required to breathe out and then recite prayers. The invocation while sowing the medicinal plants into the soil is: *'I plant this medicine for the offspring of Adam'*. The understanding is that the resource is meant for the well-being of the entire humankind irrespective of cultural and religious differences. Likewise, the healer or anyone must inhale deeply while harvesting the medicinal plant/part, followed by the invocation. Leaves of medicinal plants must be harvested in odd numbers such as three (3), five (5), seven (7) or nine (9) leaves. The significance of these numbers is unknown. The harvester has to face the east side, where the sun rises (*matahari hidup*) and the *qiblah is*, the direction of the Kaaba (the sacred building at Mecca, to which Muslims turn for prayer). It is important to make sure that no one enquires where he or she is going when harvesting the medicinal plants. Such enquiries would turn the medicine ineffective.

The findings of this study are consistent with reports of similar beliefs of Brunei Malays (Kipli 1994; Roseberg 2017). Irun's (2005) study reports that the Malay communities including the Kedayan believe that ailments are caused by factors of the unseen and seen realms which is recorded in our study as well. The Kedayan claim that an imbalance of hot and cold humours in the body leads to the manifestation of ailments, and the balance can be restored by employing 'contraries' is similar to the Unani System of Medicine (Aamir 2018; Hart 1969). Communities are known to attribute a diverse range of causative factors for ailments (Foster 1978). Such cultural understandings of ailments are not definite and are bound to change as the horizons of knowledge also change. For instance, the Konso people of southwestern Ethiopia traditionally believed that ailments are caused by supernatural forces, while the young and educated people of the current generation attributed the causes of ailments to natural factors such as contagious germs (Workneh et al. 2018).

### ***5.3.2 Intersection of Kedayan Folk Medicine and the Traditional Ecological Calendar***

Local communities often see a causative relationship between calendric time and ailments (SantoDomingo et al. 2016). They have specific time preferences for harvesting medicinal herbs and their administration for healing (Franco and Narasimhan 2012: 116–117). Folk medicinal practices are also embedded in the spiritual beliefs of the local communities (Kamsani et al. 2020). Therefore, it is not surprising that in most local communities, shamans are the healers as well as

calendar keepers (Ho and Lisowski 1993: 8). The role of ecological calendars in bridging the spiritual aspirations of communities with temporal scale is well-known (Khattri 2003; Franco 2015; Prober et al. 2011). The intersection between calendric time and folk medicine, however, has largely been overlooked.

In addition to healing, our knowledge partners also reported that they consult *orang pandai* on calendric activities such as agriculture, hunting and fishing that require knowledge on local seasonal indicators. This indicates that the *orang pandai* had also traditionally acted as the calendar keeper. For the Kedayan community, the harvesting of paddy is usually initiated by the *orang pandai*, followed by other members of the Kedayan community. They are also skilful in observing the local seasonal indicators, phases of the moon and advise the community on communal activities to be carried out. Our study finds the Kedayan calendar and time intersecting with the healing practices in three different areas: (1) medicinal plant harvest, (2) occurrence of ailments and (3) treatment of ailments.

### 5.3.2.1 Kedayan Ecological Calendar and Medicinal Plant Harvest

Phytochemical content in medicinal plants is known to vary according to seasons. Adverse weather conditions are known to increase phytochemical levels, which is often cited as the reason behind temporal preferences shown by local communities to harvest medicinal plants (Mwale et al. 2005; Ncube et al. 2011). The Kedayan have specific days and times for harvesting medicinal plants and using them in treatments. However, we could not come across any medicinal plants that are harvested only at certain months or seasons. In western biomedicine, many doctors believed in the influence of planets on the potency of medicinal herbs, and the need for harvesting them at appropriate planetary hours. Culpeper (1814) provides a list of such planetary hours. This tradition within biomedicine gradually faded off with scientific advancements. Yet, folk healers all over the world continue to prescribe auspicious timings for harvesting medicinal herbs. The folk healers of Ethiopia prefer to collect medicinal plants during the summer season and in the month of *pagume* as per their traditional ecological calendar (Limenih et al. 2015; Mesfin et al. 2009). The folk healers of the Bonda community of the Koraput region of India prefer to collect medicinal herbs only on dry days (Franco and Narasimhan 2012: 116–117). Albuquerque (2016) reports that local pharmacopoeias in areas of Northeast Brazil with Caatinga vegetation are influenced by the seasonality of plants available. Unlike the highly seasonal Caatinga vegetation, Brunei's forests are non-seasonal, owing to the equatorial climatic conditions with year-round rainfall. Brunei has only two distinct seasons: a first rainy season due to the influence of the Northeast monsoon, and a second rainy season due to the influence of the Southeast monsoon (Shams and Juani 2014). Such conditions that permit the year-round availability of medicinal plants are reflected in the Kedayan calendric preferences for harvesting them throughout the year.

The findings reveal that for the folk healers, there are specific days and times to prepare the medicine for healing as means of enhancing the potency of medicine.

Healers stated that the best time to extract medicinal plants is early in the morning. This is attributed to the cultural notion that the sun is considered ‘alive’ or optimal during dawn. Consequently, this is the time when plants receive energy from the sun, which increases the potency of medicinal plants. A few knowledge partners we interviewed claimed that harvesting medicinal plants can be done at any anytime except during *maghrib* (sunset prayer or dusk) and anytime during *azaanladhan* (call summoning Muslims for mandatory prayer). This could be due to the belief that evil spirits or *jinn* wander around during *maghrib* (sunset prayer or dusk), hence making individuals vulnerable to more ailments. This is in contrary to the preference of reports from Ethiopia where folk healers preferred to harvest medicinal plants at dusk on Wednesdays and Fridays (Limenih et al. 2015). The diversity in time preferences reported indicates that such preferences are rooted in the respective cultures.

### 5.3.2.2 Calendar and Occurrence of Ailments

Local communities see a causative relationship between certain periods of the year and the occurrence of ailments. Rate of the prevalence of infectious ailments such as malaria spike during certain seasons that are conducive for the proliferation of the pathogen vectors (SantoDomingo et al. 2016). There are also ailments such as cancer, Alzheimer’s disease and depression that are linked to the human biological clock (Deng 2018). The Kedayan see a similar connection between time and ailments caused by factors of both realms. Rapid change of season is a natural factor believed to cause ailments such as cold and cough. Likewise, high incidences of cold and cough are encountered during *musim bunga*, the flowering season. The Kedayan also see a correlation between the occurrence of hernia (*penyakit burut* and *buntal-buntalan*) and high tides (Sect. 5.3.1.5), a belief also reported by the Malay community of Kampong Ayer in Brunei Darussalam (Irun 2005). On the other hand, ailments such as spirit possession typically occur during *maghrib*. Our knowledge partners link this belief to Islam where *maghrib* is considered as a favourable time for evil spirits.

### 5.3.2.3 Calendar and Treatment of Ailments

The folk healers of the Kondh, Poraja and Gadaba communities of Koraput region of India consider certain days and times as auspicious and inauspicious for carrying out (or not) healing procedures (Franco and Narasimhan 2012: 116–117). The Kondh also believe that the rat snake turns poisonous on a Sunday. Therefore, the *dishari* (shaman) would deny treatments to such victims (Franco and Narasimhan 2012: 116–117). In Zimbabwe, poultry farmers prefer certain periods of the year to administer *Aloe vera* and *A. spicata* to fowls although both species of *Aloe* are available throughout the year (Mwale et al. 2005). Temporal preferences for administering medicine are observed in Kedayan folk medicine too. Most of our knowledge partners stated that low tides are the best times to consume medicinal preparations. High tide is believed to increase the potency of sickness (*menahan penyakit*), while low

tide cures (*membuang penyakit*). The high and low tides of the ocean are also associated with certain ailments such as hernia (*burut* and *buntal-buntalan*) that appear in correlation with high tides, showing symptoms of swelling and foaming of the organ affected. Hence, the treatment of such ailments (*burut* and *buntal-buntalan*) must be performed during low tides to avoid worsening of the condition (Sect. 5.3.1.5). It is also forbidden for the Kedayan to consume medicinal plants when it rains as the harvested medicine would lack potency. The findings are consistent with that of Irun (2005) that environmental elements such as the sun, moon and water are widely associated with the potency of medicine in Brunei Darussalam.

## 5.4 Conclusion

Our study focuses on the Kedayan folk medicine and its interface with their traditional ecological calendar. The findings reveal that the Kedayan have their own understanding of health and ailments. The causes of ailments can be broadly categorised into two—those inflicted by factors originating in the unseen realm and those caused by factors of the seen realm. The Kedayan associate the ailments caused by factors of the unseen realm to the actions of spirits such as *jinn* and evil spirits. These types of ailments are cured by folk healers who are knowledgeable in spiritual healing that includes the recitation of Qur’anic verses. For patients who are possessed, the spiritual healing method is used in combination with medicinal plants. The ailments caused by natural factors are attributed to the disobedience of natural laws or infectious agents of ailments, due to changes in foodways, change of season, post-partum disorder or due to *angin* (wind) and tidal cycles. Such factors alter the normal state of the human body, which is then rectified by employing contraries that include food and medicinal plants.

Our study finds specific areas where the Kedayan folk medicine intersects with their ecological calendar. The Kedayan believe that there are specific days and times to harvest and administer herbal medicine. However, there are no medicinal plants that can only be collected at certain months or seasons in the Kedayan calendar. There are specific time preferences for harvesting medicinal plants and their administration. There are also specific times that are considered conducive for the occurrence of ailments due to the possession by evil spirits. The tidal cycle plays an influential role in the community’s folk medicine. Ailments such as hernia (*penyakit burut* and *buntal-buntalan*) occur during high tide. Likewise, treatment of ailments should only be carried out during low tides as low tides are known to enhance the potency of herbs.

Our study provides an understanding of the Kedayan traditional knowledge related to folk medicine and ecological calendar. However, much of these could be passive, as our study did not differentiate between active and passive traditional knowledge. Future studies should look at the prevalence and dependency of these knowledges throughout the community.

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