



The medicinal properties of *ayek periok* (herbal tea) in traditional midwifery practices among Malays in Sarawak

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ABSTRACT

The traditional approach to nursing a woman after childbirth (during confinement) among the Malay community in Sarawak is under a threat of extinction as the practice is gradually being abandoned. Many adolescents nowadays find it difficult to comprehend the significance behind traditional protocols and the herbal substances used in traditional confinement care, which are either inadequately documented or remain unexplained. This situation has resulted in the younger generations becoming increasingly less exposed to this traditional practice, as well as a scarcity of scientific references on the topic and a shortage of qualified, prudent practitioners in traditional confinement care practices. Hence, this explanatory paper recognises the importance and necessity of preserving local wisdom and indigenous knowledge, and it details the types of herbs contained in *ayek periok*, based on an ethnographic inquiry solicited from a certified and practising traditional midwife. This paper reveals organic herbs, mostly used to make *ayek periok*, that the traditional herb maker rarely shares publicly. This paper is vital for maintaining an accurate understanding of how *ayek periok* is used in traditional herbal practices during postpartum care, especially for helping to prevent or lessen postpartum depression or blues. The preservation of traditional indigenous knowledge and local wisdom is vital for future generations' reference as well as for maintaining a national identity.

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1. INTRODUCTION

Maintaining harmonious intercultural associations in Malaysia's heterogeneous society (Rozaimie & Ali, 2014) necessitates an awareness of indigenous knowledge, an indispensable academic discipline that must be communicated openly. Thus, cultural adaptation has a significant impact on cultural diffusion patterns (Ormrod, 1992; Kaufman & Patterson, 2005), particularly in the context of postnatal care for women in Sarawak's Malay community. However, the modernisation and the simplification of living have altered the way of life of the Malay community today, causing indigenous knowledge, particularly traditional midwifery, which is incredibly significant, to be increasingly neglected and forgotten.

Traditional practices in midwifery or postpartum care for women among Malays in Sarawak are basically based on the belief that a woman's womb is the source of life, and this belief affects the physical, mental, and emotional health of the woman. Therefore, maintaining a healthy uterus is important to ensure that women remain radiant and charming (Barakhbah, 2007). Barakhbah (2007) emphasises that the female reproductive organ, or uterus, is elastic and the most important internal organ of a woman's body, requiring special attention, especially in terms of disease prevention, diagnosis, healing, and treatment of related diseases. Hence, traditional postpartum care among Sarawak Malays focuses on practices and observations that lead to the woman's emotional and affective healing. Usually, a woman gains weight during the development phase of pregnancy to support the presence of the foetus in her womb. After childbirth, the uterus will contract, and cellulite will appear, as well as exposed pores. The midwives traditionally believed that certain mystical elements might influence the psychological health of the mother after childbirth. Mystically, it is said that evil spirits (postpartum depression or *meroyan*) will possess the mother's body after childbirth through the fontanelle, open pores, and/or through the vagina. Therefore, midwives observe taboos, enforce restrictions, and administer traditional treatments (including herbal baths, massages, wearing corsets, hot stone therapy, and herbal medication) to warm the body and drive away the evil spirits involved (Rozaimie et al., 2022). Given that Malays are predominantly Muslim, Islamic teachings offer a solution for mystical disorders in the form of special prayers and medical therapy (*ruqyah*). The traditional or customary postpartum care for women, in particular, is said to restore the normal functioning of women's reproductive organs, improve well-being, and revitalise physical, mental, and spiritual health after childbirth.

Apparently, insufficient scientific studies and academic publications have been found to comprehensively explain Sarawak's Malay traditional confinement care therapies and the usage of herbal remedies. There remains public interest in seeking alternatives to conventional medicine. The dearth of rigorous justification for traditional confinement care was also caused by the traditional belief that it is inappropriate to confront midwives or elders about their traditional methods, mantras recited, and additional pertinent motives for using medical herbs. The elders among the Malays used to believe that the indigenous knowledge that had been passed down must be memorised and practised, but not written down, to ensure its effectiveness. Psychologically, these elders' beliefs match the Chinese proverb on effective learning, i.e., "What I hear, I forget. What I see, I remember. What I do, I understand." Apparently, this traditional belief system caused valuable indigenous knowledge or local wisdom to be lost over time due to an unavailable next-of-kin successor or a lack of effort and interest by the next generation to learn or pass down knowledge or practices, especially in the context of traditional midwifery knowledge. Furthermore, today's modern living prioritises scientific justification and laboratory proof of midwifery practices (including treatment applications and herbal medication). The scarcity of scientific studies and records on

traditional practices and indigenous herbal medications has led to diminishing interest among the younger generation in applying traditional afterbirth care, as well as a decline in the availability of herbal supply sources and experienced traditional midwifery practitioners. Hence, to prevent indigenous knowledge from becoming a mere folktale, the objective of this paper is to preserve indigenous knowledge and local wisdom, particularly in the context of traditional afterbirth care among Malays in Sarawak. Local wisdom is preserved and documented through the ethnographic enquiry method to elucidate the ingredients of the herbal tea, which is locally known as *ayek periok* (pot water). The following section discusses the practice of drinking herbal tea, particularly in the postpartum care process for women.

2. LITERATURE REVIEW

"Indigenous" is particularly defined as a theory of human behaviour or mind that is specific to a context or culture, not imported from another context/culture, and designed specifically for the people living in that context or culture; further, indigenous psychology refers to "the scientific study of human behaviour or mind that is native, that is not transported from other regions, and that is designed for its people" (Kim & Berry, 1993, p. 2). Empirically, indigenous communities vary according to geographical location, educational mission, and academic objectives and definitions of indigenous studies. The core elements in the acceptance of indigenous identity include the preservation of various sociocultural norms and institutions (Peredo et al., 2004; Kim et al., 2000; Kim & Berry, 1993). Furthermore, indigenous communities are identified as "descendants of the population that inhabited an area before later residents and were dominated in geography, politics, and economy by later residents or immigrants" (Peredo et al., 2004, p. 5). The existing culture of indigenous communities provides a geographical identity that attracts visitors to a particular area, village, district, region, state, or country. Cultural diaspora (cultural extinction, i.e., disintegration of a social identity and discontinuation of culture-specific behaviour) occurs when indigenous knowledge erodes far from its original source as a result of the consequences of colonisation, population migration, or cross-cultural marriages (Safran, 1991). Most of the ancient and traditional connotations of knowledge and wisdom of indigenous communities disappear because they are considered irrelevant in modern life or do not comply with constitutional law applications.

Meanwhile, indigenous knowledge is defined as "... a body of knowledge historically formed (emic) that plays an important role in the long-term adaptation of human groups to the biophysical environment." (Purcell, 1998: p. 260). Indigenous knowledge encompasses adaptive environmental factors that form local wisdom, which can be observed and adopted as routines and guidance. Indigenous knowledge also integrates knowledge of ideology, ethics, and epistemology (Haron & Hamiz, 2014; Purcell, 1998). Indigenous knowledge arises based on natural phenomena and is inherited, used, and practised by locals who reside in specific environments as a source of income and a method of sustaining life (Bariyyah, 2016; Haron & Hamiz, 2014). Particularly in ancient societies, the cultural system comprising beliefs, norms, values, rituals, and expressions is integrated into a system of knowledge and wisdom that serves as the basis for customs. However, indigenous knowledge is a adaptable, depending on changes in the environment or its suitability, before it is adopted or practised. Furthermore, indigenous knowledge develops, closely parallels the local lifestyle, and encompasses socio-political, socio-economic, and spiritual aspects. 'Indigenous knowledge' and 'local wisdom' refer to the knowledge and practices within indigenous traditions that are practised and applied in the culture and way of life of the local community. Indigenous knowledge provides an overview of how local communities in the past understood nature and life, as well as the values, value

assessments, and ethics that have developed over a long period. Indigenous knowledge, often called traditional wisdom or traditional ecological understanding, includes the combined results of what people have observed, created, practised, and believed, and shows how to live sustainably and manage natural and cultural resources ethically through the relationship between humans and the environment. Indigenous knowledge is passed down, either formally or informally, among family members and the local community through social gatherings, oral traditions, specific ceremonies or practices, storytelling, and the like.

The United Nations Educational, Scientific, and Cultural Organisation (UNESCO) has outlined the Sustainable Development Goals (SDGs), which are an agenda for sustainable development aimed at making cities and human settlements inclusive, safe, resilient, and sustainable. Specifically, SDG 11(4) clearly states the protection of the world's cultural and natural heritage (UNESCO, 2001). Furthermore, on May 18, 2001, the United Nations Educational, Scientific, and Cultural Organisation (UNESCO) issued its Proclamation of Masterpieces of the Oral and Intangible Heritage of Humanity. This proclamation recognises and protects most global sociocultural phenomena, including theatre, music, folklore, and ceremonies. Meanwhile, intangible cultural heritage is defined as "practices, representations, expressions, knowledge, and skills, as well as instruments, objects, artefacts, and cultural spaces associated with them, which are recognised by communities, groups, and, in certain cases, individuals as part of their cultural heritage" (UNESCO, 2001). Preservation efforts are critically important and necessary to safeguard intangible culture that is endangered (extinct and lost) for the knowledge and reference of future generations (Prott, 1998). The diminishing of intangible culture occurs when indigenous knowledge is gradually replaced and abandoned due to the currents of modernisation and the simplicity of contemporary life. Besides, the recent evolution of information and communication technology, as well as scientific advancements, has transformed indigenous knowledge into a form of folklore or historical relic. This transformational concern continuously jeopardises social identity without any appropriate initiatives and awareness aimed at preserving indigenous knowledge and local wisdom, especially in the context of postnatal care for women in the Malay community in Sarawak.

The advancement of scientific research today provides opportunities to explore and commercialise traditional medicinal herbs. Scholars (e.g., Adnan & Othman, 2012; Jamal, 2006; Ong et al., 2011; Wan Hamdzan et al., 2017) and numerous other publications elaborate on the use and discussion of the morphological and anatomical characteristics of traditional herbal plants, their local and scientific names, and their classification. Publications on the therapeutic use of these herbal plants offer broad recommendations based on readings, references, and other indigenous knowledge and local wisdom gleaned from herbal practitioners. These publications and this body of knowledge require scientific research, especially to examine the phytochemical content and active substances of the traditional herbs, particularly those used in the traditional confinement care practices. Prior studies (Barakhbah, 2007; Bariyyah, 2016; Haron & Hamiz, 2014; Rozaimie et al., 2022; Rozaimie, 2024) suggest that there is still an adequate space to explore indigenous knowledge, especially studies on traditional herbs or ethnobotany and natural plants commonly used in daily life, particularly among the Malay community. Most varieties of herbal plants that are still used today are utilised as medication and daily food to treat various illnesses, including those that affect the human body, such as diabetes, cancer, heart issues, and hypertension. Herbs are also being used to treat exterior illnesses like skin conditions, wounds, and hair problems, as well as medicinal materials used in helping women recover from childbirth. The specific phytochemical content and active substances in the herbal mixture found in *ayek periok* remain unclear, and no guidelines or consistency exists regarding the types of herbs used. Hence, the purpose of this paper is to provide a list of

the specific kinds of herbs that are used in the traditional Malay midwifery practice in Sarawak, specifically in the *ayek periok* mixture. Meanwhile, there are six traditional postpartum care procedures for women based on the customs of the Malay population in Sarawak, according to a prior study (Rozaimie et al., 2022). These procedures include cleansing, energising, healing, heating and toning, and gastronomy. This study only discusses herbal tea, commonly referred to as '*ayek periok*' (literally translated as 'pot water'), which is a crucial component of the traditional postpartum therapeutic treatment. Consuming *ayek periok* and other traditional herbal medicines is thought to energise the body and support the healing process from within, as well as to replenish energy after pregnancy and childbirth. In addition to its ability to cleanse and smooth blood circulation and strengthen the body, consuming *ayek periok* also helps prevent excessive fat accumulation in bodily tissues (Latip & Omar, 2024). The primary and most significant outcome of applying traditional care procedures is the removal of clotted blood (also known as 'lochia' or '*darah uguk*', which is internal bleeding) that may have remained in a woman's uterus following childbirth. Drinking *ayek periok* is also thought to aid in detoxification, which is the process of removing toxins from the body and preventing bloating. This *ayek periok* is typically sold by producers and practitioners of traditional herbal medicines in pre-packaged, usable sachets weighing roughly 500g each, as shown in Figure 1. Users merely need to boil the herbal sachet with water; a clay pot is advised to preserve the heat of the brew. During the confinement period (40 or 44 days), it is strongly advised to drink the still-hot/warm *ayek periok* slowly throughout the day. Ideally, each herbal sachet of *ayek periok* can be re-boiled up to three times, or until the herbs' flavour and aroma have been fully extracted.



Fig. 1. Commercially available herbal tea bags of *ayek periok* found in the market. (source: Shopee online marketplace, public domain)

Most herbs and plants used in postpartum care for women are traditionally thought to be warming whether they are used for external application, eating, or for brewing drinks (Latip & Omar, 2024). Cold-natured meals are discouraged for women going through the confinement period because they are believed to slow down the healing process, especially from the inside. Considering that blood is a heated element, traditional midwives place a lot of emphasis on this aspect. Warm-natured foods and beverages, including spices, herbs, and roots, are therefore strongly recommended for women in the confinement period (Adnan & Othman, 2012; Barakhbah, 2007; Hasbullah & Hassan, 2017; Rozaimie et al., 2022). Despite traditional remedies for confinement healing processes, the crucial question that this paper seeks to address is: what herbs are used in the making of *ayek periok*? The process for obtaining indigenous knowledge is covered in the section that follows, specifically focusing on the specific traditional herbs used (the ingredients of *ayek periok*) in the postpartum care practices among the Malay community in Sarawak.

3. METHODS

The primary objective of this ethnographic study is to preserve and record the customary postpartum care practices of Sarawak's Malay women. The practice of consuming *ayek periok* as the traditional herbal concoction is the main focus of this paper. Ethnography is generally considered a distinct, independent qualitative methodology focusing on cultural practices. Phenomenology, on the other hand, focuses on individual subjective lived experiences and is defined as "the understanding of the meaningful concrete relationships implied in the original description of experiences within a specific situational context, becoming the primary focus of phenomenological knowledge" (Moustakas, 1994, p. 14). Hence, the phenomenology-based ethnography approach (Kusenbach & vom Lehn, 2025) focuses on preserving the practices of consuming *ayek periok* as discussed in this paper. This paper aims to spread knowledge about the kinds of herbs used in *ayek periok*, not to develop substantial theories, test conceptual models, or hypothesise. Maintaining traditional Malay midwifery practices is crucial for improving the current generation's understanding of societal progress, which will benefit future generations.

In particular, ethnography is a mechanism to examine the empirical phenomenology discussed in this paper and specifically aims "to experience a comprehensive description that provides a basis for reflective structural analysis to depict the essence of the experience" (Moustakas, 1994). An ethnographic technique is "a self-narrative that describes and critiques one's own position in relation to others within a social context", according to Spry (2001: p. 710). The ethnographic technique is a type of narrative study that involves the recording and writing of knowledge, insights, and experience regarding the research topic by trained and interested individuals (Creswell, 2013; Creswell & Clark, 2017; Spry, 2001). Thus, knowledge, experience, discourse, and self-understanding reciprocate cultural beliefs, presumptions, or a broader premise (Trinh, 1991). According to Miller (1999), entitlement statements should be interpreted as a way to validate self-criticism or self-reflection that motivates others based on personal life experiences and knowledge, as well as their relationships with others in a sociocultural setting (Spry, 2001). Therefore, the empirical data obtained in this paper were corroborated with the understanding and indigenous knowledge which were obtained through in-depth discussions that developed from casual conversations with Mrs Rosnah, a certified practitioner of traditional and complementary medicine (TCM) (Malay traditional medicine). In addition, Mrs Rosnah voluntarily assisted in extracting and verifying data on the herbal content of *ayek periok* used in traditional postpartum care, as well as data from other traditional postpartum care practitioners. The indigenous knowledge of traditional confinement care and treatments that have been

practised for centuries is mostly passed down from the traditional midwife directly to her successors, primarily through practical demonstrations or personal experiences of traditional practitioners. The previous literature review section noted how practitioners and traditional midwives rarely openly publish detailed information on the herbal and plant materials used in the making of pre-packaged *ayek periok*. To preserve and respect the anonymity of the informants' identities, the names of the informants cited in this study are pseudonyms. In the meantime, this study mentions herbal names according to the Sarawak Malay dialect, like *taik angin* (*tahi angin*).

According to Polkinghorne (2005), narrative storytelling in the historiographic research method is empirical data that exclusively stands as an original description of someone's knowledge and experience. Additionally, the indigenous knowledge, practical experience, and skills possessed by the participants of the study are crucial for understanding the issues highlighted in this research paper. Depending on the geographic area from which the traditional medicine practitioners came, there were slight distinctions in scientific information on the herbal content utilised to produce pre-packaged *ayek periok* (particularly between the areas of Kuching, Samarahan, and Asajaya). Based on knowledge of contextual information, the types of plants and herbs used to make *ayek periok* were labelled. The primary participant, Mrs Rosnah, and the traditional medicine practitioners who provided empirical data for this study were contacted once again to confirm the identified compounds or plant types. Informants detailed the herbs and their respective functions as per their local wisdom. These herb descriptions were then used to conduct an online search for their scientific names and properties in agricultural databases. Additionally, this study complies with the Helsinki Declaration (WMA, 2024), which outlines ethical principles and guidelines for medical research involving human participants. The participants provided their consent for the publication of information and indigenous knowledge about the types of herbs traditionally used in making *ayek periok* by sharing empirical data and thoroughly explaining the research objectives. Adhering to the qualitative analysis procedures and research ethics requirements is vital to ensure the validity (Winter, 2000) and credibility (Patton, 1999) of the study methods and empirical data. Hence, this work confidently and accurately portrays and accepts the discussion of the research findings. The following section discusses the study findings that descriptively illustrate the examination of the subjects highlighted in this paper.

4. RESULTS

It is reiterated that the objective of this study is to document the types of herbs used in the making of pre-packaged *ayek periok*, one of the elements in the traditional postnatal care among Malays in Sarawak. Mrs Hariah, a practitioner of traditional medicine from Sarawak's Kuching area, clarified:

"I learnt about traditional postpartum care and treatments for women from my late mother, who practised these inherited customs throughout my ancestral lineage, particularly during my confinement after childbirth. I was informed that there are three distinct types of *ayek periok*: (1) *ayek periok rempah* (a spiced *ayek periok* made especially for women after childbirth); (2) *ayek periok cerah* (a crystal *ayek periok* that is consumed by single or married women, not necessarily after childbirth); and (3) *ayek periok laki* (an *ayek periok* formulated specifically for single or married men). *Ayek periok* consumption is primarily intended to aid in regulating the circulation or treating blood-related disorders like menstruation, hypertension, hypotension, and other similar illnesses." (Mrs Hariah)

Mrs Hariah did not, however, describe the herbal ingredients, the distinctions between the various *ayek periok* varieties, or the geographical basis of her understanding of these types of *ayek periok*. Thus, as shown in Table 1 below, the empirical data gathered for this paper, as narrated by the informants, primarily address the types and advantages of herbs that were frequently utilised by the traditional herbal medicine maker/practitioner specifically in the making of pre-packed *ayek periok*.

Table 1. Herb content in the *ayek periok* mixture

Content #1 (Source: Mrs Rosnah)	Content #2 (Source: Mrs Rosnah)	Content #3 (Source: Mrs Shoana)
<i>Bigik kedaong</i>	<i>Cengkani (manjakani)</i>	<i>Bigik kedaong</i>
<i>Cengkih</i>	<i>Cabik dagang</i>	<i>Buah pala</i>
<i>Daun pegaga</i>	<i>Cengkih</i>	<i>Buah pulas</i>
<i>Kayu patah tulang</i>	<i>Daun paca/inai</i>	<i>Cabik dagang</i>
<i>Kayu sepah / kayu sepang</i>	<i>Kayu sepah / sepang</i>	<i>Cengkih</i>
<i>Kayu sepatat</i>	<i>Kemukus</i>	<i>Jintan hitam</i>
<i>Kemukus</i>	<i>Ketumbar</i>	<i>Ketumbar</i>
<i>Ketumbar</i>	<i>Rumput koma / rumput sambau</i>	<i>Musi</i>
<i>Taik angin</i>	<i>Taik angin</i>	<i>Rumput koma / rumput sambau</i>
		<i>Sirih</i>
		<i>Taik angin</i>

Mrs Rosnah demonstrated that there are two varieties of *ayekperiok*. As indicated in Table 1, the herbal substance listed in content #1 is consumed during the confinement period. Meanwhile, *ayekperiok*, which contains the herbal ingredients specified in content #2, is intended for leisurely consumption to serve maintenance purposes or throughout the menstrual (PMS) phase, after the confinement period until future conception. According to the recipe that was passed down to her, the herbal substances of the *ayekperiok* should be consumed during the confinement period, as demonstrated by another informant, Mrs Shoana. Particularly, Table 1 indicates that *cengkih*, *ketumbar*, and *taik angin* are the primary herbal ingredients in the making of the *ayekperiok* herbal mix. Consequently, the local names of the herbs, as reported by the informants, were included in the subsequent descriptions, along with a further investigation into their scientific names and their properties.

1. *Bigik kedaong (Parkia timoriana)*. Scientifically, it is a source of carbohydrates, vitamins, minerals, and protein in amounts that exceed those of other legumes. *Bigik kedaong* is traditionally believed to help reduce inflammation of internal organs, including intestinal disorders, haemorrhoids, dysentery, diarrhoea, cancer, and skin diseases.

2. *Buah pala (Myristica fragrans)*. Scientifically, it may be effective in treating Alzheimer's disease and contains anti-inflammatory properties. Traditionally, this nutmeg is believed to relieve stomach and intestinal issues, including diarrhoea, and to help eliminate excess toxins from the body.

3. *Buah pulas (Helicteres isora)*. Traditionally, it helps to expel gas from the digestive system and also aids in treating stomach problems, controlling high or low blood pressure, killing stomach worms, cleansing the blood, reducing gastric issues, curing arthritis and bloody diarrhoea, and treating fever.

4. *Cabik dagang (Piper longum)*. Also known as long Indian pepper or pippali, it is traditionally believed to help increase appetite and aid in restoring the digestive system.
5. *Cengkani (manjakani) (Quercus infectoria)*. Scientifically, it contains antiviral, antibacterial, and antilarval properties that help improve the digestive system and is used as a laxative because it is high in fibre. Traditionally, it is used to help restore and improve the elasticity of the uterine wall.
6. *Cengkih (Syzygium aromaticum)*. Scientifically, it contains a lot of manganese, a mineral that helps the body produce enzymes to repair bones and regulate metabolism and energy. Traditionally, cloves are believed to help stabilise certain hormones in the body.
7. *Daun paca / daun inai (Lawsonia inermis)*. Traditionally, the resulting decoction is consumed to treat jaundice, spleen disease, stomach pain after childbirth, sore throat, irregular menstruation, sexually transmitted diseases, and vaginal discharge.
8. *Jintan hitam (Foeniculum vulgare)*. Scientifically, it contains high levels of carbohydrates and fibre, which help the digestive system and boost the body's resistance to diseases. Traditionally, it helps to repair skin damage and reduce stretch marks, especially among women during pregnancy.
9. *Ketumbar (Coriandrum sativum)*. Scientifically, it is a source of vitamin C, calcium, magnesium, potassium, and iron. Coriander seeds are traditionally believed to contain chemicals that may lower blood pressure by causing blood vessels to dilate. Meanwhile, its essential oil may have antibacterial effects.
10. *Kayu patah tulang (Euphorbia tirucalli)*. Scientifically characterised as a vesicant and rubefacient, it is used to treat rheumatism, warts, coughs, asthma, earache, toothache, and neuralgia. Traditionally, it is believed to help restore the swollen or expand uterus during pregnancy and facilitate the respiratory system.
11. *Kayu sepah / kayu sepag (Biancaea sappan)*. It is the bark of a tree that is traditionally dried and is believed to help accelerate the healing of internal uterine wounds caused by the childbirth process.
12. *Kemukus (Piper cubeba)*. It is a black pepper with the skin left on, traditionally believed to help treat various diseases, including syphilis, gonorrhoea, asthma, diarrhoea, stomach pain, and dysentery.
13. *Pegaga (Centella asiatica)*. Scientifically, it is a source of triterpenoid chemicals that help protect the skin and improve blood circulation to heal wounds. Traditionally, it is believed to help heal wounds, especially those related to the female uterus during childbirth, as well as to lower blood pressure and to have anti-ageing properties.
14. *Rumput koma / rumput sambau (Eleusine indica)*. Scientifically, it contains high antioxidant properties, particularly in the root of this plant, which is used to treat asthma, fever, and urinary tract infections. Traditionally, this plant is believed to help relieve pain and cold symptoms.
15. *Sirih (Piper betle)*. It is a plant that is used for medicinal purposes, specifically to treat intestinal-related diseases, relieve bloating, and improve the digestive system.
16. *Taik angin (Usnea thallus)*. It is a type of dried root believed to help reduce excess weight and traditionally believed to relieve sore throats, speed up wound healing, and reduce pain and fever.
17. *Kayu sepapat (*No information obtained.)*
18. *Musi (*No information obtained.)*

The traditional *midwives* thought that the main cause of postpartum depression or psychosis in women was "tangled" veins, bloating, or flatulence (gas accumulation in the digestive tract). In essence, all of these herbs are thought to be able to alleviate these issues. The symptoms of postpartum depression can be seen during the confinement period following childbirth, right after the confinement period, or later when the woman reaches menopausal age. Furthermore, the aforementioned herbs are thought to have short-term benefits in lowering blood pressure, fever, urinary tract infections, and premenstrual syndrome (PMS) pain. Particularly, every suggested traditional medicinal herb, food, and beverage has a big impact on a woman's physical health. It helps with hormone and blood circulation, and it also helps women regain their physical body shape, emotions, and spirituality after giving birth. Moving forward, the following section discusses the significance of the traditional usage of plants and herbs in postpartum care for women, as well as its ramifications.

5. DISCUSSION

Due to a decline in public knowledge and desire (and demand) for traditional postpartum care, traditional midwifery is no longer a preferred profession among today's youth. The lack of conservation efforts, replanting, and agricultural initiatives led to the abandonment of indigenous knowledge and the loss or difficulty in obtaining many traditional plants. Consequently, the results presented in this paper regarding the types of plants and herbs used to make pre-packaged *ayek periok*, as previously mentioned, indicate that it is essential to preserve these herbs' market availability for the benefit of future generations, especially with regard to postpartum care. Furthermore, the preservation of indigenous knowledge and local wisdom is essential to understanding the ancestral contribution and inherited knowledge, particularly with regard to the traditional postpartum care practices of the Malays in Sarawak.

The concepts behind present catchphrases used in health and wellness campaigns, including protecting the environment and greenery and eating a diet high in organic and chemical-free foods, have actually been practised for a very long time by our ancestors. Therefore, to foster societal acceptance and associations (Arslan, 2018), it is crucial to have a thorough understanding of indigenous knowledge, especially with regard to the types of herbs that are traditionally used in postpartum care and treatment. Even though contemporary healthcare has demonstrated the psychological consequences (which include postpartum depression, postpartum psychosis, i.e. a serious mental disorder including delusions, hallucinations, or irrational behaviour, or postpartum blues, such as emotional stress), the majority of today's youth seem to dismiss the specific significance of traditional postpartum care and the issues of postpartum psychological disorders after childbirth (locally known as *meroyan*) as mere rhetoric (see Rozaimie et al., 2022; Razali, 2016). Hence, alongside the organic herbs and plants thought to increase a woman's fertility, traditional postpartum care should be acknowledged as an alternative treatment for postpartum disorders.

Organic materials (herbs) are mostly used in traditional postpartum care, as they are believed to assist in healing and cleansing the woman's uterus after childbirth (Barakhabah, 2007). The traditional medicinal herbs are mostly natural or organic without a mixture of chemical additives compared to the modern treatment substances. For instance, ibuprofen and paracetamol can aid with short-term pain relief after childbirth, which may have long-term implications due to the cumulative effects of chemicals in the body. Furthermore, studies (Scherrer et al., 2014) have shown that consuming excessive amounts of medication can raise the likelihood of getting serious depression. Alternatively, the health benefits of using herbs and plants in traditional postpartum care serve to eliminate excess toxins from the body and naturally stimulate

blood circulation (Lara-Cinisomo et al., 2017; Bariyyah, 2016; Haron & Hamiz, 2014; Barakbah, 2007). Thus, it is essential to chronicle indigenous knowledge to enable raising a awareness among young adults about the significance of traditional postpartum care and to appreciate local knowledge to preserve cultural elements for future references, particularly among the Malays in Sarawak.

There is a strong likelihood that scientific and clinical studies on the nutritional and therapeutic qualities of plants and herbs used in traditional medicine could meet consumer demand for more affordable and nutrient-dense food and medicine. Researchers (Satya et al., 2013) assert that the current trend in health consciousness has fuelled the creation of functional foods, which may offer health advantages while lowering the risk of illnesses and developmental abnormalities. Thus, biomedical research that focuses on herbs and traditional plants used to make *ayek periok* has potential economic worth as a dietary supplement. The outcomes of such a biomedical study are encouraging and should provide significant returns on market investments based on the most recent developments in natural research technology that come from comprehensive fermentation procedures.

It is crucial to clarify that the findings of this paper list the types of herbs, spices, and plants that are frequently used, acquired, or still accessible in the market for the production of pre-packaged *ayek periok*. Nevertheless, this paper does not generalise its findings (on the herbal ingredients of *ayek periok*) to all Malays in Sarawak. Notably, topographical considerations; the accessibility of plants or herbs in a settlement location; local or specific knowledge about what works for specific community groups (taboos); and other socio-ecological variances (Rozaimie, 2018; Rozaimie et al., 2023; Rozaimie, 2024; Withers et al., 2018) contribute to the differences in the making of *ayek periok* according to the maker's indigenous knowledge, experience and expertise. Therefore, it is strongly recommended that future research broaden the scope to investigate, analyse, and gather empirical data on the types of plants and herbs used in the production of pre-packaged *ayek periok* by other traditional practitioners in Sarawak (other than those in the Kuching and Samarahan districts). A thorough investigation is crucial and required to improve the reflectivity of the traditional postpartum care procedures and lessen bias in attempts to generalise research findings and create precise and standardised standards for producing *ayek periok*.

According to Kotut and McCrickard (2022), social media literacy education is essential in light of current artificial intelligence and communication trends because it provides people with the knowledge, facts, and precise images they need to navigate the digital world more sensibly and ethically. Thus, those involved in cultural heritage preservation can use documented or preserved indigenous knowledge and local wisdom for professional growth. While developing future generations and traditional postpartum care practitioners with the relevant knowledge, abilities, and attitudes to successfully nurture and preserve the country's heritage, professional development with an adaptable standard system offers substantial commercial potential, especially regarding the pre-packaged *ayek periok*. Darling-Hammond et al. (2009) highlighted that culturally relevant professional development programmes should prioritise learning through collaborative research, facilitated experiences, and ongoing reflection. They should also encourage an innovative and continuous improvement culture within educational institutions. The empirical data disclosed in this study validate the significance of social acceptability and social connectivity for subjective well-being, as emphasised by Arslan (2018) as a psychosocial resource for psychological empowerment, and is based on the body of knowledge and policy.

6. CONCLUSION

This paper mainly enumerates the types of herbs and traditional plants that are still used and accepted in the making of pre-packed *ayek periok* for consumption by women in confinement after childbirth among Malays in Sarawak. Consuming *ayek periok* is traditionally thought to be one of the key steps in voiding the incidence of postpartum depression (*meroyan*, i.e., a mental illness characterised by abnormal behaviour and emotions following childbirth) (Barakbah, 2007; Razali, 2016). Apparently, the following factors contributed to young adults' diminishing interest in employing traditional postpartum care and medicinal treatment: (1) difficulty obtaining plant and herbal supplies, especially for making *ayek periok*; (2) lack of verified references and/or records that document those traditional practices; (3) inadequately precise and scientifically validated dependability of those conventional methods; (4) the modernisation and simplicity of contemporary living; and (5) a decline in the number of midwives who are knowledgeable and practising the traditional methods of confinement care and postpartum treatments. Nevertheless, there is now a dearth of contemporary medical technologies to help women or mothers regain their emotional and mental well-being following childbirth. Thus, scholars (Rozaimie, 2018; Withers et al., 2018; Bariyyah, 2016; Haron & Hamiz, 2014; Barakbah, 2007) strongly advocate and support the significance and benefits of traditional postpartum care practices, which encompass not only specific physical care and support to prevent isolation and disability after childbirth but also the use of herbal remedies and organic plants that are beneficial for fertility and longevity in the long run. In conclusion, it is our obligation to preserve indigenous knowledge, especially regarding the types of plants and herbs used to produce *ayek periok*, as this knowledge has been shown to be an essential element in preserving social identity, particularly among Sarawak's Malays.

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8. CONFLICT OF INTEREST STATEMENT

The authors agree that this research was performed in the absence of any self-benefits or commercial or financial conflicts and declare that there are no conflicting interests among the authors and third parties.

9. AUTHORS' CONTRIBUTIONS

All authors contributed equally to the conceptualisation, supervision, and data curation; data collection; data analysis; and writing and revising of the manuscript.

10. DECLARATION OF GENERATIVE AI IN THE WRITING PROCESS

In the construction of this paper, we used the AI applications Quillbot and Grammarly for English grammar checking.

11. DATA AVAILABILITY/ SUPPLEMENTARY MATERIALS

There are no supplementary materials attached to this paper. However, the datasets (interview records and transcriptions) sharing is not applicable to this paper, as no new datasets were generated or analysed during the current study.

12. ETHICS STATEMENT

The study was referred to the Research Ethics Committee of Universiti Teknologi MARA, Sarawak Branch, and all procedures involving human participants were conducted in fulfilment of the ethical standards of the 1964 Helsinki Declaration (WMA, 2024), which outlines ethical principles and guidelines for medical research involving human participants. Through the sharing of empirical data and a thorough explanation of the objectives of the research, the participants provided their consent for the publication of information and indigenous knowledge concerning the types of herbs traditionally used in the making of *ayek periok*.

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