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Combining Natural Ingredients and Beliefs: The Dayak Tribe's Experience Caring for Sick Children with Traditional Medicine

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ABSTRACT

Instead of seeking conventional health care, the Dayak tribe in Borneo, Indonesia, treats sick children at home with traditional medicine. The objective of this descriptive, qualitative study was to explore the Dayak tribe's use of traditional medicine to care for sick children. Comprehensive interviews were conducted with 10 caregivers, with collected data analyzed using content analysis. Key recurring themes identified were: 1) traditional medicine as first aid; 2) ease of access and cost-effectiveness; 3) traditional medicine was not always effective; 4) a combination of natural ingredients and beliefs; 5) the importance of "communicating" with plants; and 6) engagement with metaphysical forces. Health professionals should respect familial cultures' beliefs regarding the provision of health care at home. Furthermore, they need to develop competency in performing cultural assessments and providing information to these parents on the risks of not seeking professional emergency care for children with conditions that can't be handled at home with traditional medicine.

KEYWORDS

Dayak tribe; experience; sick children; traditional medicine (TM)

Introduction

The Dayak tribe in Borneo, Indonesia, possesses specific knowledge and experience in using traditional medicine (TM) to treat children at home for particular diseases, based on cultural ideas and individual beliefs. Regarding TM, individual practices involve the recognition of plant species and their usable parts, knowledge of processing methods, and the benefits gained. Furthermore, a societal health culture and values, which are passed down from generation to generation, also affect an individual's health behavior and compliance with health recommendations (Gardiner et al., 2013). For example, inherited information, knowledge, and an understanding of plant functions and processing are used to treat sick children. The dispensation of TM mixtures also is influenced by geographical location and the ethnicity of a given group in a specific area (Gardiner et al., 2013), based on beliefs that

certain plants possess distinctive properties and that their medicinal use incurs minimal side effects (Nasoichah, 2010).

The experience of treating sick children with TM is diminishing with the proliferation of modern medicine globally, as more and more people abandon traditional practices that use plants growing around their dwellings for medicinal purposes. Some medicinal plants grow naturally in remote swamps and forests, and they cannot live outside these specific habitats. In this study, parental experience, knowledge, attitudes, and beliefs concerning TM from a cultural, social, and economical perspective were explored, as well as their roles and involvement in the provision of family-centered health care in an effort to answer the research question: What is the experience of the Dayak tribe in caring for sick children by using TM?

Methods

The study design was descriptive qualitative, and a phenomenological approach was applied. The data were collected in May 2017 in Sintang, Borneo, and surrounding areas. The participants in the study were Dayak caregivers who treated sick children at home using TM prior to subsequently deciding to seek care at modern healthcare facilities. The study participants were selected through purposive sampling based on information obtained from the traditional healers and midwife of the respective regions. The data were collected through comprehensive interviews and voice recordings, and the content was analyzed by employing the Colorafi and Evans method, in which researchers read the verbatim transcriptions, then repeatedly and manually review them.

Ten participants met the study's inclusion criteria: a principal caregiver with experience treating sick children at home with TM before and after seeking conventional modern health treatment for the children. The participants consisted of five fathers, four mothers, and a grandmother. Ethical clearance was obtained from the Ethical Committee of the Faculty of Nursing at Universitas Indonesia (No.133/UN2.F12.D/HKP.02.04/2017). The study complied with the principles of ethical research, including autonomy, non-maleficence, beneficence, and justice. The trustworthiness of the study was achieved by member checking to confirm that the themes emerged and fit with the experiences of participants and by providing an audit trail to present details of the research process.

Results and discussion

Regarding themes and underlying context, the themes will be described and explained in detail. Six themes were identified from the data: 1) TM as first aid; 2) ease of access and cost-effectiveness; 3) TM was not always effective;

4) a combination of natural ingredients and beliefs; 5) the importance of “communicating” with plants; and 6) engagement with metaphysical forces. Each theme will be described in more detail in the next sections.

TM as first aid

TM was preferred over conventional medicine to treat children in emergency situations. One study participant said, “Yes, it is only for first-aid purposes” (P2) and “...So, we use TM for first-aid purposes” (P4). In the Dayak tribe’s village, individuals are reluctant to present at a modern healthcare facility if it means crossing difficult terrain or arriving at a facility with a sick child only to find that it is closed. Parents had to travel 5 to 30 minutes on foot or by motorcycle with their children to access the nearest healthcare facility, either Polindes or Poskesdes (the healthcare center in the village), with no guarantee that a health professional would be present at the facility. Our study findings resemble those reported in a study by McCullagh, Sanon, and Foley (2015), in which a lack of transportation and poor availability of healthcare providers resulted in infrequent use of professional health services.

In the current study, participants reported sometimes having to travel in the rain, on muddy, slippery, winding roads full of puddles and potholes to access medical treatment at a fully equipped healthcare facility. Generally, there was no adequate lighting on the road due to its location in a thickly forested area surrounded by a hill. Once there, the cost of the health service was punitively expensive. When it was not possible to travel by land, the health center can be accessed through the river, plus some travel over land. It was reported in a study by Towns, Eyi, and Andel (2014) that in these circumstances, TM was primarily used to treat people in emergency situations, with modern medicine used to treat more complicated diseases.

Ease of access and cost-effectiveness

TM was preferred over conventional medicine in the current study because participants said, “It is so simple” (P2), i.e., easy to access and administer. The parents of sick children in the study used medicinal plants that were readily obtainable from their immediate environment, or used common spices, such as onions (*Allium cepa var. aggregatum*), eggs, cooking oil, turmeric (*Curcuma longa*), rice (*Oriza sativa*), and raw cutcherry (*Kaempferia galanga*), as these could be acquired in their neighborhoods at an affordable price or for free as the plant growth.

Accordingly, cost-effectiveness became one of the reasons TM was used in the Dayak tribe. One participant said, “Low cost is among the reasons; we are not required (sic) to see the doctor. It is a waste of money, isn’t it?” (P2). TM was preferred over conventional, modern medicine mainly for economic reasons,

and especially because the former did not require admission to a hospital, nor the need to obtain a prescription. Our research findings are supported by those in studies by Aziato and Antwi (2016), reported that treatment with medicinal plants was common in communities because they were easily accessible, and Hanafiah (2014), who said TM was available at an affordable price.

TM not always effective

Several factors affect the success and failure of TM. It was perceived by participants as having numerous benefits. “If we regularly use (TM), then they (the children) will recuperate soon enough,” one participant said (P5). TM has been demonstrated anecdotally to possess healing properties considered to be greater than those of modern treatments, and it’s often used when a conventional medicine fails as a treatment for a condition. One cited example of TM’s effectiveness involves stomach ailments. “Those (children) with a stomachache will be relieved (sic) in no time,” one participant said (P8).

Natural ingredients are used in TM remedies, while synthetic chemicals are used in modern medications. In a study by Aziato and Antwi (2016), natural, beneficial ingredients with minimal side effects were used to prepare TM, while the use of modern medicine, composed of synthetic chemicals, was perceived to be ineffective. Reasons for TM use also were outlined in a study in Bolivia by Mathez-Stiefel, Brandt, Lachmuth, and Rist (2012) and included its natural origin, beneficial ingredients, and a general avoidance of harmful, addictive, or inefficient modern drugs. In general, mothers believed in the efficacy, benefits, and safety of TM, especially in the treatment of local diseases that did not require medical attention (Webair & Ghouth, 2014).

However, findings from this current study suggest that TM can be ineffective if used improperly. Herbal ingredients are affected by various factors, such as the type of herb chosen, soil conditions, geographical origin, time taken to obtain the plant, the extraction technique used, processing method, contamination of instruments, and storage (Moore, Akhbarizadeh, Keshavarzi, & Tavakoli, 2015). One participant complained: “(I) followed the suggestion [using an incisor], but it does not seem to work” (P10). She continued sharing her story about the use of incisor in TM for her child who was had a fever. The child’s health did not improve, so the caregiver turned to conventional medical treatment, which also proved to be ineffective in reducing the child’s fever. Finally, another TM treatment was used successfully to treat the child’s fever. “It didn’t work at all... then (the) last TM used healed” (P10). Interestingly, a study by Webair and Ghouth (2014) in Yaman reported that mothers often did not tell conventional health professionals that the medical treatment that they provided was ineffective. Instead, they would consult another conventional health professional before eventually using TM to treat their children.

Combination of natural ingredients and beliefs

It also was revealed in the study that people use TM as a way to show respect for their elders and the *shamans* (village health care providers). The shamans prepared natural ingredients and selected methods of administering TM. “It [onion] can be mashed or squeezed; its extract can be applied directly here [touching the forehead] or all over the body [indicating the whole body from the upper trunk to the toes]; that’s all I know,” as one participant described it (P2). Another participant shared her TM remedy: “The tuber should be chewed and mixed with rice so it can be patched; chew it, mix it with a little bit of rice, and then spray it on here on forehead, belly, and the back too” (P9). These two distinct TM methods demonstrate that TM was prepared and applied differently according to personal beliefs. It also might depend on the health problems that the shamans tackled. Our research findings were supported in a study by Kunwar, Mahat, Acharya, and Busmann (2013), which described how TM processing can involve boiling, mashing, grating, brewing, grilling, cooking, immersing, or squeezing of ingredients—or no processing at all.

Interestingly, TM was used in combinations with certain beliefs to treat children. Apart from the application of natural ingredients extracted from herbs, it is believed that disease symptoms also can be relieved in other ways, without the use of any medicine, such as through a medium or prayer. Several participants described their preparations, which relied more on their beliefs: “The ingredients involve a coin, the one with a queen’s head on it. Its colour is white, the coin I mean. Umm ... and then, we take an egg. The egg should be boiled. Then we take the egg white and dispose the egg yolk. Do not use the egg yolk. Only the egg white. Then we take, umm ... white cloth, it should be a white cloth” (P4). Another participant based his practice on religious guidance —“everything that is based on Al-Quran” (P1). This participant used prayer to relieve the symptoms of his child’s toothache. He recited verses from the Quran with the objective of eradicating the bacteria. A study conducted by Tursunova, Kamp, Azizova, and Azizova (2014) found some TM practices for healing the sick targeted demons by reciting the Quran to purify the people and the environment in which they lived.

Importance of “communicating” with plants

Study participants said compliance with certain practices or cultural aspects was necessary in TM practice, including time taken to obtain the necessary ingredients for treatments, the need to meet certain requirements with respect to plants so they would “grant a cure,” and the observation of manners and etiquette. As one participant said about one ritual, “He spread salt and rice to shed the plant” (P5). Furthermore, another participant shared

a story: “I ask (the plant) for the medicine for (the child) who has just fell (sic); I ask for the medicine.... I put some salt and rice on it (the wound), then cover it. Oh, and I tell the child whom I mentioned earlier to get well soon. Just like that” (P3). Caregivers, as part of the Dayak tribe, routinely honored their traditions and culture during the current study by using salt and rice as main ingredients in their daily lives. The Dayak tribe attributed significance to medicinal plants in that they drew inspiration from them to be “wise” and to use and cultivate these plants accordingly. In this way, TM practices were maintained and preserved.

It was believed by the Dayak tribes that whoever used the plants in the medicine preparation should reward the plants by communicating to the plants and scattering the rice and salt into the plants. The caregivers also were expected to give salt and rice to the plants from which extractions had been made. Medicinal plants were left to grow in the woods or beside roads. Only a few people cultivate them around their houses. This suggests that Dayak cultural beliefs imply that plants always should be respected, as they provide humanity with cures for diseases. The Dayak shamans communicated with the plants from which they wanted to extract ingredients to make preparations to treat ailing children, telling the plant the child’s name and asking it for a cure.

As for a scientific explanation, plants produce and respond to sound waves, emitting and receiving sound to learn about the environment because acoustic waves spread rapidly and can provide environmental data (Gagliano, 2012). Furthermore, Gagliano, Renton, Depczynski, and Mancuso (2014) claimed that plants can communicate, feel happiness, express fear, possess short-term memory, and read minds. Plants also emit acoustic signals, suggesting a method of communication exists among them. Dayak shamans who extracted what they needed from plants did it carefully, sowing rice and salt as a reward, since it was believed that the plant could provide a cure.

Engagement with metaphysical forces

Engagement with metaphysical forces was described as a TM practice within the Dayak tribe. According to Dayak tribe beliefs, mystical powers can be used to cure certain diseases. A participant said the shamans “used some sort of spells” (P3) in some TM treatments, sometimes focusing the spell on specific parts of the body, with spiritual forces coming into play: “If it (the disease) comes from a spirit or anything, he can handle that” (P3). It was shown in the current study that some of the participants engaged with supernatural forces to cure diseases. Supernatural forces were used to cast spells to cure burned skin, remove fish bones stuck in the throat, or extract foreign objects from eyes, among other uses. Spells may be used in the form of prayers to relieve symptoms as well. Caregivers firmly believed in the power of spells to cure disease, a belief passed down from generation to generation.

The help of traditional healers was sought during a study by Towns et al. (2014) to heal diseases blamed on magic. Traditional healers reportedly cured diseases that were untreatable by medical science. Bova, Krippner, Budden, and Galante (2016) found in another study that the most popular TM was magic, witchcraft, enchantment, and divination, which involved chants, potions, and/or other concoctions. Furthermore, it was demonstrated in the current study that sometimes an item would be placed on parts of the body of a child, or near the body, to help heal an ailment. The Dayak tribe viewed the item as a healing medium. For example, one participant said, “Just look for *urat lalang* (*Imperata Cylindrica* L. Raeusch), roll it, and put it under his bed” (P4). Kayambo (2013), in a study, reported on the use of charms, which are believed to protect people from illnesses, mishaps, sorcery, malevolent spirits, and/or people with the “evil eye.” It was assumed that certain physical or psychological diseases, untreatable with conventional medical treatments, were caused by spirits, and that certain charms can ward off or cure physical and psychological ailments.

Conclusion

In the current study, six main themes were observed in the Dayak tribe’s use of TM to treat sick children. These findings can contribute to evidence-based practices for the provision of nursing care to patients in cultures that use TM to treat adults and children. Health professionals should identify whether any TM treatments were used both prior to and after providing conventional health services to patients from such cultures, and they should provide detailed information and counselling to parents regarding any changes in symptoms that would indicate urgent, professional medical care is needed for their children to address life-threatening situations.

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Declaration of interest

The authors report no conflicts of interest.

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