

# Exploring tabooed food among Dayaknese of Ngaju Women in Central Kalimantan Province, Indonesia

Suyitno<sup>1\*</sup>, Linda Suwarni<sup>2</sup>, Asmarawati<sup>3</sup>, Mohamad Sadli<sup>4</sup>, and Agnescia Clarissa Sera<sup>5</sup>

<sup>1</sup>Occupational Health and Safety Program, Politeknik Medica Farma Husada Mataram, Indonesia

<sup>2</sup>Department of Public Health, University of Muhammadiyah Pontianak, Indonesia

<sup>3</sup>Department of Nursing, College of Health Science Sukabumi, Indonesia

<sup>4</sup>Department of Public Health, College of Health Science Cirebon, Indonesia

<sup>5</sup>Department of Nutrition, Poltekkes Kemenkes Palangka Raya, Indonesia

DOI: <https://doi.org/10.36685/phi.v9i3.715>

Received: 20 July 2023 | Revised: 5 August 2023 | Accepted: 12 September 2023

Corresponding author:

**Suyitno, SKM., MPH**

Occupational Health and Safety Program, Politeknik Medica Farma Husada Mataram

Jl. Batu Ringgit, Tj. Karang, Kec. Sekarbela, Kota Mataram, Nusa Tenggara Bar. 83116, Indonesia

Email: [nameseno@gmail.com](mailto:nameseno@gmail.com)

**Copyright:** © 2023 the Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium provided the original work is properly cited.

## Abstract

**Background:** Dayak Ngaju is a sub-ethnic group of the Dayak tribe in Central Kalimantan, Indonesia. This group practices cultural practices as an identity, including the food taboo.

**Objective:** This study aimed to explore the food taboo practices among women of Ngaju Dayaknese living in Central Kalimantan Province.

**Methods:** A qualitative descriptive study was employed. A total of 12 informants were included, consisting of three pregnant women and two breastfeeding women as the main informants, five relatives of each woman, a midwife, and an ethnic leader. The in-depth interview was done in the study of Kartamulya Village, Sukamara District, Central Kalimantan Province. Content analysis was used for data analysis.

**Results:** All the women were of reproductive age. Types of foods and dishes that are categorized as taboo include unripe pineapple, durian, chempedak, jackfruit; gourami (*kalui*), catfish/*lele*, puffer fish/*buntal*, wallago/*tapah*, snakehead fish/*kerandang*, marble goby/*bakul/betutu*, forest snakehead fish/*jujung*, shark catfish/*patin*; luffa gourd/*gambas/oyong*, bamboo shoots, stinky beans/*jengkol*; and soda. The food taboo for breastfeeding mothers was not described in detail.

**Conclusion:** There was no reason to accept the scientific aspects of avoiding those foods rationally. Restricting the consumption of food during pregnancy and breastfeeding might have the risk of being anemic. Further study can include the anemia assessment to examine the impact of food taboo practices and anemia. Stakeholders at the village level can collaborate to decrease the negative health impact of food taboo practices on pregnant and breastfeeding mothers.

**Keywords:** food taboo; preferred food; pregnant women; breastfeeding women; Dayak Ngaju

## Background

Humans require food on a daily basis, but it also serves as a symbol of actualization. Food serves as a symbol of the significance associated with it. As a result, people use food for cultural traditions, prayer

routines, dietary preferences, and sometimes even food avoidance (Lupton, 1996). The practices of food taboos are different between groups of people; for instance, people in France and India tend to consume food from nature without the cooking process and less sugar (Bianchi et al., 2016; Lakshmi, 2013). People in Ethiopia, Bangladesh,

and India prefer to eat food contains cow milk, butter, and mammal meat as their meal (Choudhury & Ahmed, 2011; Hadush et al., 2017; Lakshmi, 2013; Zerfu et al., 2016).

The impact of food taboo practices is diverse. Women are a group of people impacted by the food taboo, which has affected their health; for example, they have a higher risk of being anemic because of avoiding some kind of food (Merrill et al., 2017). Additionally, if pregnant women are subjected to dietary taboo behaviors, the baby will also be affected. A high likelihood of low birth weight, early birth, growth restriction, and mortality exists in newborns due to the practices of the food taboos of their mothers (Allen, 2000; World Health Organization, 2014).

Focused on women, people in developing countries like India, Nigeria, and Indonesia categorized fruits such as pineapple, mango, and jackfruit as taboo because of the belief in miscarriages for pregnant women (Choudhury & Ahmed, 2011; Diana et al., 2018; Ferro-Luzzi, 2018; Zerfu et al., 2016). Unluckily, food that contains high protein, such as beef, duck, rabbit, and egg, were categorized as taboo because some people believe those foods could lead to miscarriages (Arzoaquoi et al., 2015; Bhanbhro et al., 2020; Choudhury & Ahmed, 2011; Ferro-Luzzi, 2018; Onuorah & Ayo, 2003).

The Dayak Ngaju is an indigenous ethnic group from Central Kalimantan, Indonesia, also called the Ngaju people. They are a sub-ethnic group of the Dayaks, the island of Borneo's original inhabitants. The Kapuas River, Indonesia's longest river, is where the majority of the Ngaju people live. The Dayak Ngaju has a rich cultural past and has historically practiced animism, a religion that believes that natural phenomena and ancestors' spirits have spiritual meaning. However, many Ngaju people have also joined Islam and Christianity as a result of outside influences and the spread of these religions in the area (Laksono & Wulandari, 2021). The Dayak Ngaju were traditionally adept at farming, fishing, and hunting. They engaged in shifting cultivation, often known as "swidden farming" or "slash-and-burn agriculture," whereby they burned vegetation to clear small pieces of ground before planting crops. The Ngaju people grew staple crops, including rice, maize, fruits, and vegetables. The Dayak Ngaju comprise a significant portion of Indonesia's rich

ethnic tapestry and contribute distinctive traditions, handicrafts, and spiritual beliefs to the country's diversified cultural landscape. In terms of access to health care, this ethnic group needs approximately 32 km to reach primary health care, implicated high Maternal Mortality Rate (MMR), which was 305 per 100,000 live births, and Infant Mortality Rate (IMR), which was 24 per 1000 live births (Central Bureau of Statistics Indonesia, 2010; World Bank, 2006).

Indonesia's Borneo Island is home to the province of Central Kalimantan. It is the largest province in the nation and is frequently referred to in Indonesia as Kalimantan Tengah. The province has a population of about 2.7 million people and a total area of approximately 153,800 square kilometers (59,400 square miles) (Central Bureau of Statistics Indonesia, 2010; Pitoyo & Triwahyudi, 2017). The unique fauna, rivers, and lush rainforests of central Kalimantan are well known. A sizeable amount of the tropical rainforest on the island, which is a component of the Borneo rainforest, one of the oldest and most biodiverse rainforests in the world, is found in this area. Numerous species live in the woodlands, including orangutans, probosci monkeys, hornbills, and other indigenous plants and animals. The original residents of Central Kalimantan were the indigenous Dayak people, which also included subethnic groups like the Dayak Ngaju. Previous studies conducted in Indonesia found some foods categorized as taboo, including fruits and meat, because they believe they will make the baby big (Chahyanto & Wulansari, 2018; Lestari & Wulansari, 2018; Sukandar, 2007).

Regarding preference and tabooed food, most of the studies concerned more food taboos than preference food. For instance, a study from another province described food taboos, including squid, shrimp, fish, egg, goat meat, pineapple, durian, and eggplant, which also showed iron deficiency (Sri Harnany & Fatimah Muis, 2007). There is no reason to avoid those kinds of foods, and it is unacceptable for scientific reasons (Intan, 2018; Kartikowati & Hidir, 2014; Sri Harnany & Fatimah Muis, 2007). Accordingly, most of the studies were not concerned about the time and circumstances women followed or did not follow food taboos. Therefore, this study aimed to explore food taboo practices among women of Dayak Ngaju who lived in Kartamulya Village, Sukamara District, Central Kalimantan Province. This study will focus on how women of

reproductive age and their relatives adopt and ignore cultural norms.

## Methods

### Study Design

This study employed a qualitative descriptive design to explore the type of food categorized as taboo and suitable for pregnant and breastfeeding women among the Dayak Ngaju Ethnic Group. This study was conducted in Kartamulya Village, Sukamara sub-district, Sukamara Regency, Central Kalimantan Province, Indonesia.

### Samples/Participants

The participants in this study were selected by using a snowball sampling strategy. Snowball is also known as the chain referral sampling method. It was started to choose initial participants based on the specific criteria relevant to the topic (Whitehead & Whitehead, 2020). After these participants were interviewed or observed, they were asked to provide referrals to other individuals who meet the desired characteristics or have relevant experiences. The initial person who was contacted was the midwife in the village. Based on her referral, the next informants were pregnant and breastfeeding women, then the relative of each woman could be selected based on the women's recommendation.

The inclusion criteria for selecting the sample were those originally from the Dayak Ngaju Tribe in Kartamulya Village, being able to communicate in the local and national language, and finishing the in-depth interview for all sections. Then, the exclusion criteria were those who were selected by previous informants but could not be able to communicate. Five women consisted of three pregnant women and two breastfeeding women. Moreover, each woman needs to recommend one relative who could give information about food taboo practices. Besides the midwife, the tribe leader was also interviewed to explain cultural practices in the village

### Data Collection

Data were collected in June 2023 by using in-depth interviews. In-depth interviews, document reviews, and media reviews were all used in this study's qualitative methodology. The interview was done by authors "S", "LS", and "ACS". S has a background in primary health care management and has experience working in remote areas among Dayak

people for two years. LS is a lecturer at a university in West Kalimantan Province. ACS is a lecturer in the Department of Nutrition in Palangkaraya, Central Kalimantan Province. S is male, and LS and ACS are female. All of them have experienced qualitative study and have attended the training for qualitative research.

Before the interview, researchers introduced themselves, the objective of the study, and the reason why this study was engaging. The interview guidance has been piloted to 3 Dayak peoples in Sukamara Village, Sukamara District, Central Kalimantan Province, where the characteristics of the village are similar. The interview guide questions included the type of food that was categorized as taboo, what circumstances people practice taboo, how those kinds of food were classified as taboo, and the reference food that is recommended to be consumed for women, especially pregnant and breastfeeding women. The data collection was done by following the interview guidelines, but it was developed based on the information given by respondents to get deeper and broader information.

The interview was recorded audio and visual with the consent of the informants and was not repeated. Informants could be refused at any time during the data collection. Researchers also made field notes during the interview. The data was collected face-to-face in the informant's home for 20 – 30 minutes. Interviews between women and relatives have been conducted in different rooms and, at times, to ensure confidentiality. No one else was present besides the participants and researcher during the in-depth interview.

After the data collection, all researchers discussed the saturation points, which is the point where the additional data is not needed because the participants have reported similar information. The transcripts of data were not returned to participants, but researchers confirmed unclear information via phone.

### Data Analysis

The data were analyzed by using a content analysis. The data analysis consists of steps including identifying, organizing, and interpreting patterns or themes within the data to generate meaningful insights and understanding of the research topic

(Humble & Mozelius, 2022). Those analyses were done with NVivo software, licensed by the Institute for Population and Social Research at Mahidol University. Three researchers, “S”, “LS”, and “ACS”, coded the data. The coding tree was provided apart from the code in the software. All the themes were identified in advance, but a few were derived after collecting the data.

### Trustworthiness

To assess the trustworthiness of this qualitative study, the credibility and reliability of the research findings have been studied (Rose & Johnson, 2020). Credibility to the authenticity of this study was done, such as prolonged engagement by spending sufficient time with participants and in the informant’s home. Moreover, the triangulation was also done by adding to observation the document related to food taboo practices based on religion. Peer debriefing was also done by discussing the findings with other authors in order to gain different perspectives on food taboo practices (Earnest, 2020). The authors provided rich and detailed descriptions of the research setting, participants, and methods to ensure transferability. The context and condition of findings from this study might apply to other Dayak Ngaju in other districts in Central Kalimantan Province. The saturation point was also reached to provide confidence that data have been thoroughly explored and that the themes are representative of the participant’s perspectives.

### Ethical Considerations

The ethical clearance of this study was approved by the Health Research Ethics Committee, National Research and Innovation Agency (Komisi Etik Bidang Kesehatan) Badan Riset dan Inovasi Nasional (BRIN) with Ref No: 047/KE.03/SK/05 /2023.

## Results

### Participants Profiles

This study’s subjects included a total of 12 informants, consisting of three pregnant women and two breastfeeding women as the main informants, five relatives of each woman, a midwife, and an ethnic leader. These comprised indigenous Dayak Ngaju Ethnic groups living in Kartamulya Village, Sukamara Regency, Central Kalimantan Province. The main informants are women with the following characteristics

- *Pregnant woman 1*: 18 years old, pregnant with the first child, and six months of gestational age, lived with husband aged 20 years old and worked as a driver. Moreover, she lived with her mother-in-law.
- *Pregnant woman 2*: 23 years old, pregnant with second child, and three months of gestational age, lived with mother who sell vegetables in the market. Her husband works as a building maker in another sub-district and returns once a week.
- *Pregnant woman 3*: 20 years old, pregnant with first child, and seven months gestational age, lived with husband, mother-in-law, and two sisters-in-law. Her husband works as a teacher in an elementary school in the village.
- *Breastfeeding woman 1*: 35 years old, breastfed for a third child, lived with husband and two children.
- *Breastfeeding woman 2*: 23 years old, breastfed for her first child, lived with husband only.

Aside from the five women above as the main participants, information was also obtained from relatives who lived together with women who can explain food taboo practices. **Table 1** describes the relationship between women and relatives.

**Table 1** Relationship between women and relatives

Participants type	Relationship with women
Relative P1 (Relative of a pregnant woman 1)	Mother-in-law of Participant P1
Relative P2 (Relative of a pregnant woman 2)	Biological mother of Participant P2
Relative P3 (Relative of a pregnant woman 3)	Sister-in-law of Participant P3
Relative B1 (Relative of breastfeeding woman 1)	Husband of Participant B1
Relative B2 (Relative of breastfeeding woman 2)	Husband of Participant B2

Apart from the main participants and relatives, two other respondents are a midwife and an ethnic

leader in the Kartamulya Village. The midwife is 36 years old and has ten years of experience as a

midwife in the village, coded as M. The ethnic leader in this study is 55 years old and has lived in the village for 40 years, coded as E. The variation of participant's backgrounds was essential to compare the information about food taboo

### Theme 1: Food Taboo and Preference Food among Pregnant Women of Reproductive Age

Types of fruits that are categorized as taboo are unripe pineapple (*Ananas comosus*), durian (*Durio zibethinus*), chempedak (*Artocarpus integer*), and jackfruit (*Artocarpus heterophyllus*). Most women said those fruits were considered "hot," which would be dangerous for the infant. Additionally, the unripe pineapple is related to the risk of miscarriage. According to the type of fish, it was described that gourami/kalui (*Osphronemus gouramy*), catfish/lele (*Clarias insolitus*), and wallago/tapah (*Wallago attu*) are considered taboo because they believed they would lead the abortion. Moreover, some taboo vegetable types are luffa gourd/gambas/oyong (*Luffa acutangula*) and stinky beans/jengkol (*Archidendron pauciflorum*). The type of drink that is included as taboo is soda or carbonated water. According to the information from the ethnic leader, there are additional fishes that are categorized as taboo, such as puffer fish/buntal (*Dichotomyctere ocellatus*), snakehead fish/kerandang (*Channa pleurophthalma*), marble goby/bakut/betutu (*Oxyeleotris marmorata*), forest snakehead fish/jujung (*Channa lucius*), and shark catfish/patin (*Pangasius pangasius*). However, since there is much patin cultivation nowadays, many people ignore patin as taboo and consume it regularly. A few families still avoid eating patin because of the taboo.

*"Durian and young pineapple are not allowed to be consumed for pregnant women"* (Pregnant Woman 3)

Apart from dietary taboos, some interviewees highlighted pregnant women's preferred cuisine. Because they positively impact health, the preferred foods are those that are advised to be eaten. Milk, almond, egg, banana, papaya, fish with scaly skin, meat, carrot, banana's heart, star gooseberry's leave/katuk, lemon basil/kemangi, red fern, and spinach were the recommended foods for pregnant women. It's interesting to note that, in contrast to the prohibited food information, the desired information primarily originates from health professionals. The midwife informed pregnant women to consume

healthy food that will positively impact the infant. It was educated during the ANC (antenatal care), which is conducted once a month.

*"I think this is general, that katuk is good for pregnant women for preparing the breastfeeding"* (Pregnant Woman 1)

### Theme 2: Food Taboo and Preference Food among Breastfeeding Women of Reproductive Age

Food taboo for breastfeeding women was mentioned very little. Most participants explained that the tabooed food for breastfeeding women is the same for pregnant women because they have similar characteristics. The items categorized as taboo for breastfeeding women are sour fruits, food with too much oil, fish with red eyes, meat, spicy and sour food, and vegetables cooked with coconut milk and milk. Compared to pregnant women, breastfeeding women need to pay attention to the breastmilk product, and pregnant women need to focus on the fetus' development in the womb.

*"Especially for sour and spicy food, those are not good for breastfeeding because will impact on breastmilk taste..."* (Breastfeeding Woman 1)

The preferred food for breastfeeding women is quite similar to the select food for pregnant women. The items categorized as good for breastfeeding women are ripe pineapple, fresh coconut water, pelasuh water (water that the religious leader prays), and all vegetables. Breastfeeding women tend to consume more vegetables because it contains vitamins and minerals that are good for the volume of breastmilk production.

*"Coconut water is good as well for me. It was recommended by my mother..."* (Breastfeeding Woman 2)

### Theme 3: The Role of Relatives, Midwives, and Ethnic Leaders in Food Taboo Practice

The information received from relatives varied. The biological mother and mother-in-law could be able to explain the type of food taboo, but they did not explain the reason behind it clearly. The relatives, sisters, and husbands did not explain the type and reason of food taboo in detail. However, the women reported that their mothers and mothers-in-law sometimes pushed them to avoid some type of food without enough explanation.

*"To prevent many bad things, pregnant women are recommended to avoid catfish..."* (Relative P2)

*"We want to have a healthy baby and avoid many bad things that might possibly occur. So, we just follow what our parents recommended for my wife"* (Relative B1)

The midwife reported that the food taboo practice had been practiced for a long time. It was not easy to change the culture, which is not in line with the scientific evidence. Midwives also mentioned that women prefer to believe information from family rather than health professionals. Ethnic leaders reported no written regulation of cultural practices, such as food taboos. There is no fine for those who do not practice food taboos. Midwives and ethnic leaders did not have a solid influence to educate women.

*"I have been working in this village for a long time. But it is still not easy to educate people on the importance of consuming various types of food with adequate quantity..."* (Midwife)

*"There is no written regulation/policy that people have to avoid this and this type of food. They just follow food taboo because of older one recommendation"* (Ethnic leader)

## Discussion

### Theme 1: Food Taboo and Preference Food among Pregnant Women of Reproductive Age

The practices of food taboos might be diverse among Dayak because many sub-ethnics Dayak lived on Kalimantan Island. In Dayak Ngaju, there were many fishes categorized as taboo. Even though those fishes contain high protein and iron, which protect pregnant women from anemia. In a previous study among Dayak people who lived in Sintang, West Kalimantan Province, women were not allowed to eat black sticky rice, fish, salted fish, bamboo shoots, taro, jack fruit, pineapple, durian, chili, and ice (Huda et al.). As more studies discuss pregnant women, it was also found that Dayaknese lived in South Barito Regency, who believed there is no taboo food for pregnant women in case they consume enough rice, vegetables, and dishes for 2 – 3 times a day. A few did not eat meat and avoid milk; for instance, noodles and energy-boosting drinks are not recommended (Legawati et al.). Among women in the Bugis ethnic group, Sulawesi Island, they are not allowed to eat crab, shrimp, duck egg, duck, moringa leaves, eggplant, bamboo

shoots, fermented food, unripe pineapple, durian, and mango. Moreover, they also need to practice taboo behavior such as not sleeping at dusk, getting a haircut, sitting at the door, eating on a large plate, and the husband is not allowed to kill animals (Suriah & Adriani, 2022). There is no scientific reason behind what informants reported. The reason mostly mentioned the risk of miscarriage and abortion.

During the ANC (Antenatal Care), pregnant women may ask about good food for the fetus. It was similar to the findings of this study that found most of the respondents described the food categorized as taboo compared to preferred food. The midwife explained that any food is good for pregnant women since the portion is appropriate (not too small or too large). The type of foods categorized as good are healthy food.

### Theme 2: Food Taboo and Preference Food among Breastfeeding Women of Reproductive Age

According to findings from this study, the tabooed food for breastfeeding women is not adequately mentioned. Food taboo is sour and spicy, which will impact the taste of breastmilk. Among Dayak Meratus, post-partum women are prohibited from eating chicken meat and eggs. They also need to avoid food that is too sweet, too spicy, too sour, and itching risk. Among Dayak Meratus, women, after delivery, are not allowed to be exposed to the sunlight because it might risk blurred and bleeding. Not infrequently, these cultural practices are dangerous to women. For example, the ethnic groups of Hatam, Sough, Lereh, Walsa, and Moi Kalabra in Papua believe that pregnancy, delivery, and postpartum are natural life steps (Dumatubun, 2002). Therefore, they let the pregnant and postpartum women live outside the main house, mostly in the *barack* behind the main house, which is uncomfortable for the women.

However, they prefer foods needed for post-partum mothers, such as turmeric, which is good for the breast to produce more milk (Sofiyanti, 2022). All the foods are good for breastfeeding women because the mother needs to recover after delivery, and the baby needs breast milk. Katuk is a common vegetable that is very recommended for breastfeeding women.

### Theme 3: The Role of Relatives, Midwives, and Ethnic Leaders in Food Taboo Practice

Families play a crucial role in influencing women's food consumption. It was evident from the family members' concern for the mother and the infant. The mother's actions, as opposed to the mother's attitude and perceived competence, have a greater influence on the children's choice of food, according to cultural norms among tribal people (Baloch et al., 2020). According to this study, a mother's position is essential to the family; hence, it is crucial to implement her recommendations. The mother's actions reflect cultural practices, such as food taboos (Udayana & Dyah Wulan, 2022). Impliedly, Indonesia's patriarchal structure may be a factor in unequal household food access. In a patriarchy, the male leader of the home holds both superior and inferior power (Asiyanbola, 2005). In this study, the mother and mother-in-law greatly pushed and forced women to follow the food taboo practice. They felt they had more experience than the women. They also mentioned the consequences of ignoring the food taboo, such as miscarriages, abortion, difficulties during delivery, etc.

Nearly the majority of the data from earlier studies revealed the unfavorable results of following food taboos. For instance, the dual effects of banned foods, such as those that are culturally sensitive and rely on communal nutrition (Iradukunda, 2020). The issue of anemia is another health effect of avoiding certain food kinds, according to research that also identified pregnancy-related dietary taboos and superstitions as a public health risk (Mohammed et al., 2019). Energy deficiency is also mentioned due to practicing food taboos in Southeast Sulawesi Province (Angkasa & Iswarawanti, 2021). A few studies reported the benefits of food restriction, which might be due to the type of foods categorized as taboo, such as sugar-sweetened beverages, coffee, and alcohol (Labonté et al., 2023). Those who practice food taboos tend to have a deficit in protein intake, as found in the study in Pojoksari Village, Indonesia (Wulandari et al., 2022). An impact on food taboo is also reported by the study in Cambodia that mentioned unhealthy food as categorized as taboo (Labonté et al., 2023)

Every ethnic group has distinctive customs and rituals that comprise a significant portion of its culture. The practice of food taboo as a social and cultural identity may hurt one's health due to

inadequate dietary sources. In Tanzania, ethnicity and anemia were closely related because of the practice of food taboos (Msemu et al., 2018). According to a study conducted on a tribal population in India, people who live in a marginalized population, such as an ethnic minority, have a significant tendency to have anemia because of food. According to a study conducted on a tribal population in India, people who live in a marginalized group, such as an ethnic minority, tend to have anemia due to dietary practices (Ismail et al., 2017). Race and ethnic groups may have more genetic variables prevalent than other groups due to demographics and ethnicity (Maakaron, 2018). Due to their diets' low meat content, ethnic groups from underdeveloped nations had a substantially higher frequency of iron deficiency anemia. Similar results about dietary practices (food taboo) that cause anemia were found in a different study carried out among ethnic minorities in China (Zhang et al., 2017). Another example is in East Nusa Tenggara, where the Sasak ethnic group in Lombok holds that pregnant women should not eat stingrays, catfish, squid, shrimp, crab, chicken, eggs, beef, or marine fish since doing so will complicate delivery and increase the risk of bleeding (Armini et al., 2009).

The leading causes of anemia among women of reproductive age were insufficient iron intake from food and loss of iron from the body. Other issues involved people tending to have high protein intake from vegetables rather than animals, irregular weekly fruit intake, inappropriate cooking methods of vegetables, and food quality. Women who eat less meat and eggs are more likely to have anemia than others (Zhang et al., 2017). This is because women maintaining a vegetarian diet contribute to low dietary intake of heme iron (Ganapathi & Kumar, 2017).

In the local context, this study will improve the understanding of "food taboo" and "good food" in health. As a vulnerable group of people, pregnant and breastfeeding women need to pay more attention to food intake, which needs to be confirmed to health personnel beforehand. In the global context, this study expresses the variety of cultural norms among one ethnic group in Indonesia, the points they consider good and bad, and their impact on health. All the stakeholders at the local and global level need to arrange programs to prevent the worst effect of food taboo practices on health.

## Conclusion

Food taboo practices have commonly happened among Dayak Ngaju people. Pregnant women and breastfeeding mothers are the groups of people who have a higher impact to be forced and pushed to follow food taboo practices. In Kartamulya Village, Sukamara District, Central Kalimantan Province, it was found several foods and dishes categorized as taboo, including unripe pineapple, durian, chempedak, jackfruit; gourami (*kalui*), catfish/*lele*, puffer fish/*buntal*, wallago/*tapah*, snakehead fish/*kerandang*, marble goby/*bakul/betutu*, forest snakehead fish/*jujung*, shark catfish/*patin*; luffa gourd/*gambas*, bamboo shoots, stinky beans/*jengkol*; and soda. The food taboo for breastfeeding mothers was not described in detail. There was no reason to rationally accept the scientific aspects of avoiding those foods. Restricting the consumption of food during pregnancy and breastfeeding might have the risk of being anemic. Further study can include the anemia assessment to examine the impact of food taboo practices and anemia. Stakeholders at the village level can collaborate to decrease the negative health impact of food taboo practices on pregnant and breastfeeding mothers.

### Declaration Conflicting Interest

None to declare.

### Funding

None.

### Acknowledgment

The authors would like to all informants and stakeholders who participated in this study.

### Author Contribution

S, ACS, and LS obtained and analyzed the data and developed the topics. A, MS, and S highly contributed to the conceptualization and design of the study. All authors critically reviewed the manuscript and took part in the discussion part. All authors read and approved the final manuscript.

### Author Biography

*Suyitno* is a Lecturer in the Occupational Health and Safety Program, Politeknik Medica Farma Husada Mataram, Indonesia. The courses taught are socio-anthropology of health, safety culture and occupational health, and courses related to medical anthropology and health social science.

*Linda Suwarni* is a Lecturer at the Department of Public Health, University of Muhammadiyah Pontianak, Indonesia.

*Asmarawati* is a Lecturer at the Department of Nursing, College of Health Science Sukabumi, Indonesia.

*Mohamad Sadli* is a Lecturer at the Department of Public Health, College of Health Science Cirebon, Indonesia.

*Agnescia Clarissa Sera* is a Junior Lecturer at Department of Nutrition Poltekkes Kemenkes Palangka Raya, Indonesia. Her current research focus is in functional foods, food packaging, food product development, utilization of food byproducts and ethnobotany.

## References

- Allen, L. H. (2000). Anemia and iron deficiency: Effects on pregnancy outcome. *The American Journal of Clinical Nutrition*, 71(5), 1280S-1284S.
- Angkasa, D., & Iswarawanti, D. (2021). Do food taboo and dietary diversity associated with risk of chronic energy deficiency among pregnant women living in rural setting of Southeast Sulawesi, Indonesia? *Proceedings of the Nutrition Society*, 80(OCE2). <https://doi.org/10.1017/s0029665121000847>
- Armini, N. K. A., Pradanie, R., & Sudariani, P. W. (2009). Community of Lombok's tradition effects the nutrient intake behavior in pregnant woman. *Jurnal Ners*, 4(2), 155-160.
- Arzoaquoi, S. K., Essuman, E. E., Gbagbo, F. Y., Tenkorang, E. Y., Soyiri, I., & Laar, A. K. (2015). Motivations for food prohibitions during pregnancy and their enforcement mechanisms in a rural Ghanaian district. *Journal of Ethnobiology and Ethnomedicine*, 11(1), 1-9. <https://doi.org/10.1186/s13002-015-0044-0>
- Asiyanbola, A. (2005). Patriarchy, male dominance, the role and women empowerment in Nigeria. The International Union for the Scientific Study of Population (IUSSP/UIESP) XXV International Population Conference Tour, 18-23.
- Baloch, F. A., Jomezai, N. A., & Mohamed Ismail, S. A. M. (2020). Food and cultural norms: Rural mothers' selection of nutrition intake for their young children. *Health Education*, 120(1), 87-106. <https://doi.org/10.1108/HE-09-2019-0040>
- Bhanbhro, S., Kamal, T., Diyo, R. W., Lipoeto, N. I., & Soltani, H. (2020). Factors affecting maternal nutrition and health: A qualitative study in a matrilineal community in Indonesia. *Plos One*, 15(6), e0234545. <https://doi.org/10.1371/journal.pone.0234545>
- Bianchi, C. M., Huneau, J.-F., Le Goff, G., Verger, E. O., Mariotti, F., & Gurviez, P. (2016). Concerns, attitudes, beliefs and information seeking practices with respect to nutrition-related issues: A qualitative study in French pregnant women. *BMC Pregnancy and Childbirth*, 16, 1-14. <https://doi.org/10.1186/s12884-016-1078-6>
- Central Bureau of Statistics Indonesia. (2010). *Penduduk Indonesia (Population of Indonesia): The result of Indonesia Population Census 2010*. Jakarta: Central Bureau of Statistics Indonesia



- Chahyanto, B. A., & Wulansari, A. (2018). Aspek gizi dan makna simbolis tabu makanan ibu hamil di Indonesia. *Jurnal Ekologi Kesehatan*, 17(1), 52-63.
- Choudhury, N., & Ahmed, S. M. (2011). Maternal care practices among the ultra poor households in rural Bangladesh: A qualitative exploratory study. *BMC Pregnancy and Childbirth*, 11(1), 1-8. <https://doi.org/10.1186/1471-2393-11-15>
- Diana, R., Rachmayanti, R. D., Anwar, F., Khomsan, A., Christianti, D. F., & Kusuma, R. (2018). Food taboos and suggestions among Madurese pregnant women: A qualitative study. *Journal of Ethnic Foods*, 5(4), 246-253. <https://doi.org/10.1016/j.jef.2018.10.006>
- Dumatubun, A. (2002). Kebudayaan, kesehatan orang Papua dalam perspektif antropologi kesehatan. *Antropologi Papua*, 1(1), 2-15.
- Earnest, D. (2020). Quality in qualitative research: An overview. *Indian Journal of Continuing Nursing Education*, 21(1), 76.
- Ferro-Luzzi, G. E. (2018). Food avoidances of pregnant women in Tamilnad. *Ecology of Food and Nutrition*, 2(4), 259-266. <https://doi.org/10.1080/03670244.1973.9990346>
- Ganapathi, K. C., & Kumar, K. S. (2017). A cross-sectional study of anemia among women of reproductive age group (15-49 years) in a rural population of Tamil Nadu. *International Journal of Medical Science and Public Health*, 6(3), 524-530. <https://doi.org/10.5455/ijmsph.2017.0954915092016>
- Hadush, Z., Birhanu, Z., Chaka, M., & Gebreyesus, H. (2017). Foods tabooed for pregnant women in Abala district of Afar region, Ethiopia: An inductive qualitative study. *BMC Nutrition*, 3(1), 1-9. <https://doi.org/10.1186/s40795-017-0159-x>
- Huda, S. N., Kartasurya, M. I., & Sulistiyani, S. Perilaku berpantang makan pada ibu hamil suku dayak di Kabupaten Sintang Kalimantan Barat. *Jurnal Manajemen Kesehatan Indonesia*, 7(3), 191-197.
- Humble, N., & Mozelius, P. (2022). Content analysis or thematic analysis: Similarities, differences and applications in qualitative research. *European Conference on Research Methodology for Business and Management Studies*, 21(1), 76-81.
- Intan, T. (2018). Fenomena tabu makanan pada perempuan Indonesia dalam perspektif antropologi feminis. *PALASTREN: Jurnal Studi Gender*, 11(2), 233-258.
- Iradukunda, F. (2020). Food taboos during pregnancy. *Health Care for Women International*, 41(2), 159-168. <https://doi.org/10.1080/07399332.2019.1574799>
- Ismail, I. M., Kahkashan, A., Antony, A., & Sobhith, V. (2017). Role of socio-demographic and cultural factors on anemia in a tribal population of North Kerala, India. *International Journal of Community Medicine and Public Health*, 3(5), 1183-1188. <https://doi.org/10.18203/2394-6040.ijcmph20161381>
- Kartikowati, S., & Hidir, A. (2014). Sistem kepercayaan di kalangan ibu hamil dalam masyarakat melayu. *Jurnal Paralela*, 1(2), 159-167.
- Labonté, J. M., Kroeun, H., Sambo, S., Rem, N., Luhovvy, B. L., Karakochuk, C. D., Green, T. J., Wieringa, F. T., Sophonneary, P., & Measelle, J. R. (2023). Restricting diet for perceived health benefit: A mixed-methods exploration of peripartum food taboos in rural Cambodia. *Maternal & Child Nutrition*, e13517. <https://doi.org/10.1111/mcn.13517>
- Lakshmi, G. (2013). Food preferences and taboos during ante-natal period among the tribal women of north coastal Andhra Pradesh. *Journal of Community Nutrition & Health*, 2(2), 32.
- Laksono, A., & Wulandari, R. (2021). Pantangan makanan pada suku Muyu di Papua [The food taboo of the Muyu Tribe in Papua]. *Amerita Nutrition*, 5(3), 251-259. <https://doi.org/10.20473/amnt.v5i3.2021.251-259>
- Legawati, L., Warella, Y., Shaluhayah, Z., & Nugraheni, S. Regulations and behavior of Dayak community teenage pregnancy care in the new normal era: qualitative studies. *International Journal of Health Sciences*, 6(II), 6094-6114.
- Lestari, W., & Wulansari, S. (2018). Pertunjukan wayang interaktif sebagai sarana promosi kesehatan remaja tentang rokok, narkoba dan pergaulan bebas. *Buletin Penelitian Sistem Kesehatan*, 21(2), 125-132.
- Lupton, D. (1996). Food, the body and the self. *Food, the Body and the Self*, 1-192.
- Maakaron. (2018). Anemia race-related demographics. <https://emedicine.medscape.com/article/198475-overview#a6>
- Merrill, R. D., Burke, R. M., Northrop-Clewes, C. A., Rayco-Solon, P., Flores-Ayala, R., Namaste, S. M., Serdula, M. K., & Suchdev, P. S. (2017). Factors associated with inflammation in preschool children and women of reproductive age: Biomarkers Reflecting Inflammation and Nutritional Determinants of Anemia (BRINDA) project. *The American Journal of Clinical Nutrition*, 106(suppl\_1), 348S-358S. <https://doi.org/10.3945/ajcn.116.142315>
- Mohammed, S. H., Taye, H., Larijani, B., & Esmailzadeh, A. (2019). Food taboo among pregnant Ethiopian women: magnitude, drivers, and association with anemia. *Nutrition Journal*, 18, 1-9. <https://doi.org/10.1186/s12937-019-0444-4>
- Msemu, O. A., Bygbjerg, I. C., Møller, S. L., Nielsen, B. B., Ødum, L., Perslev, K., Lusingu, J. P., Kavishe, R. A., Minja, D. T., & Schmiegelow, C. (2018). Prevalence and risk factors of preconception anemia: A community based cross sectional study of rural women of reproductive age in northeastern Tanzania. *Plos One*, 13(12), e0208413. <https://doi.org/10.1371/journal.pone.0208413>
- Onuorah, C., & Ayo, J. (2003). Food taboos and their nutritional implications on developing nations like

- Nigeria—a review. *Nutrition & Food Science*, 33(5), 235-240.
- Pitoyo, A. J., & Triwahyudi, H. (2017). Dinamika perkembangan etnis di Indonesia dalam konteks persatuan negara. *Populasi*, 25(1), 64-81.
- Rose, J., & Johnson, C. W. (2020). Contextualizing reliability and validity in qualitative research: Toward more rigorous and trustworthy qualitative social science in leisure research. *Journal of Leisure Research*, 51(4), 432-451.
- Sofiyanti, I. (2022). Gambaran praktik budaya pada masa nifas di Suku Dayak Meratus [Description of cultural practices during the postpartum period in the Meratus Dayak Tribe]. *Journal of Holistics and Health Sciences (JHHS)*, 4(1), 9-19. <https://doi.org/10.35473/jhhs.v4i1.123>
- Sri Harnany, A., & Fatimah Muis, S. (2007). *The influence of food taboo, nutrient sufficiency level, the consumption of tea and iron tablet to pregnant women hemoglobine in Pekalongan City 2006*. Semarang: Universitas Diponegoro
- Sukandar, D. (2007). Makanan tabu di Barito Kuala Kalimantan Selatan. *Jurnal Gizi dan Pangan*, 2(2), 44-48. <https://doi.org/10.25182/jgp.2007.2.2.44-48>
- Suriah, S., & Adriani, S. (2022). Perspectives of pregnancy care in rural areas by pregnant women of Bugis ethnicity. *Science, Engineering and Health Studies*, 22050006-22050006. <https://doi.org/10.14456/sehs.2022.14>
- Udayana, S., & Dyah Wulan, S. R. W. (2022). The influence of local culture on mothers during pregnancy on stunting incidence. *Journal of Positive Psychology & Wellbeing*, 6(1), 2172-2180.
- Whitehead, D., & Whitehead, L. (2020). *Data collection and sampling in qualitative research* (6th ed.). Sydney: Elsevier.
- World Bank. (2006). A new era in poverty alleviation in Indonesia overview. <http://sofian.staff.ugm.ac.id/artikel/lkhtisar-Laporan-BD-ttg-Kemiskinan-di-Indonesia.pdf>
- World Health Organization. (2014). *Global nutrition targets 2025: Breastfeeding policy brief* (WHO/NMH/NHD14. 7). Geneva: World Health Organization.
- Wulandari, C., Kardina, R. N., & Wijaya, S. (2022). Analysis of food taboo culture with protein intake in pregnant women. *Medical Technology and Public Health Journal*, 6(2), 207-212. <https://doi.org/10.33086/mtphj.v6i2.3434>
- Zerfu, T. A., Umeta, M., & Baye, K. (2016). Dietary habits, food taboos, and perceptions towards weight gain during pregnancy in Arsi, rural central Ethiopia: A qualitative cross-sectional study. *Journal of Health, Population and Nutrition*, 35(1), 1-7. <https://doi.org/10.1186/s41043-016-0059-8>
- Zhang, X., He, Y., Xie, X., Ji, M., Ma, X., & Yu, Z. (2017). Distribution of hemoglobin and prevalence of anemia in 10 ethnic minorities in China: A population-based, cross-sectional study. *Medicine*, 96(50), e9286. <https://doi.org/10.1097/MD.00000000000009286>

**Cite this article as:** Suyitno., Suwarni, L., Asmarawati., Sadli, M., & Sera, A. C. Exploring tabooed food among Dayaknese of Ngaju Women in Central Kalimantan Province, Indonesia. *Public Health of Indonesia*, 9(3), 123-132. <https://doi.org/10.36685/phi.v9i3.715>