

ORIGINAL ARTICLE

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Folk beliefs of food avoidance and prescription among menstruating and pregnant Karbi women of Kamrup district, Assam

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Abstract

Background: This paper discusses the social dimension of gastronomy, such as folk beliefs regarding avoidance and prescriptions during the stages of menstruation and pregnancy. Cooking and eating are imbued with special meanings, but how they are related to an individual's multiple identities, such as menstruating and pregnant women, and how these idioms and ideologies affect food choice negotiated through folk beliefs are discussed. Do food prescriptions contribute to nutrition? Looking for these answers, the present study was undertaken in two blocks densely populated by Karbi tribe in Kamrup district of Assam, India. The objective of the study was to understand the values of folk beliefs scientifically.

Methods: The data was collected by conducting focus group discussion among adolescent girls and pregnant women.

Results: It can be concluded that the foods which are included during menstruation and pregnancy were nutrient rich and foods avoided during that period was somewhat scientific.

Keywords: Indigenous food habits, Folk beliefs, Menstruation, Pregnancy, Karbi society

Introduction

Folk beliefs of food and indigenous practices of eating and cooking foods constitute intangible cultural heritage of a community and an identity marker of a particular culture. The folk beliefs of food govern what foods are edible and what are inedible in a particular culture. Culture determines not only the consumability of food but prescribes foods during particular phases of life cycle such as menstruation, pregnancy, childbirth, or death. Folk beliefs about food avoidance or acceptance start as old wives tales. But with its continued practice, it becomes a tradition. Such traditions of avoidances or acceptance may or may not have any scientific basis. Benno [1] mentioned that food taboos and associated beliefs have a long history and one ought to expect a

sound explanation for the existence of certain dietary customs in a given culture. Therefore, an understanding of these cultural heritages of food is very important as these may provide valuable clues to health care. The present paper reveals the folk beliefs of food among the Karbi people of Assam (located in the northeastern part of India) with reference to two important stages of life cycle—menstruation and pregnancy (Fig. 1). The Karbi is an important ethnic group of Assam mainly concentrated in Karbi Anglong district. The Karbis linguistically belong to the Tibeto-Burman group. Basically a hill tribe, they are also distributed in plain regions of Assam in the districts of Nagaon, Kamrup, Morigaon, North Cachar and Sonitpur. Outside Assam, they have settled in Khasi and Jaintia Hills districts of Meghalaya (Fig. 2).

The significance of menstruating women and the period of pregnancy are widely recognized status in many societies. During these stages, immense attention is required in terms of food and nutrition. In many

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Fig. 1 Map of India showing Assam Source: <http://mapsopensource.com/images/assam-location-map-black-and-white.gif>

societies, folk beliefs of foods are necessarily to be observed during these physiological periods. According to Awoniyi [2], “the love for children is so intense that as soon as a woman becomes pregnant a new social status is automatically conferred on her. She is now respected, treated and handled with care.” The pregnant women are then “subjected to series of taboos (relating to their diet and behaviours) which are designed to preserve protect and promote the health of mother and foetus” [3]. The folk beliefs of food are followed religiously by Karbi women especially during the times of physiological changes. The period of adolescence is a very important phase especially among girls as they are the future mothers of the coming generation. So, to achieve a healthy adolescent period, adequate nutritional care during menstruation is required. If an adolescent girl is healthy, she will lead a healthy adult life which will ultimately lead to a healthy pregnancy period and birth of infants of normal birth weight. It is noteworthy to mention that in the state of Assam, the infant mortality rate (IMR) is the second highest in India at 44 and the maternal mortality rate is 237, the highest among all states

[4]. Therefore, this work was undertaken to analyze the additions and deletions of foods during the two important phases of women’s life to understand whether these folk beliefs of food are actually hampering the health of a woman or is a blessing in disguise.

Materials and method

The present study was undertaken among Karbi women of Kamrup district of Assam. Two administrative blocks of Kamrup district, i.e. Chandrapur and Dimoria, were selected as these were densely populated by Karbi population. Chandrapur which is a hilly semi-urban area is located approximately 15 km from Dispur, the capital of Assam. Dimoria is in the outskirts of Guwahati city and has several communities including Karbi, Tiwa, Boro, Rabha, Garo, Tea Tribes and some others living together. The data was collected from 15 villages where Karbi population was densely populated. Focus group discussion was conducted in every village to collect data from adolescent girls in the age below 18 years and pregnant women in the age group of 19 to 49 years. Interview schedule was used for eliciting information from

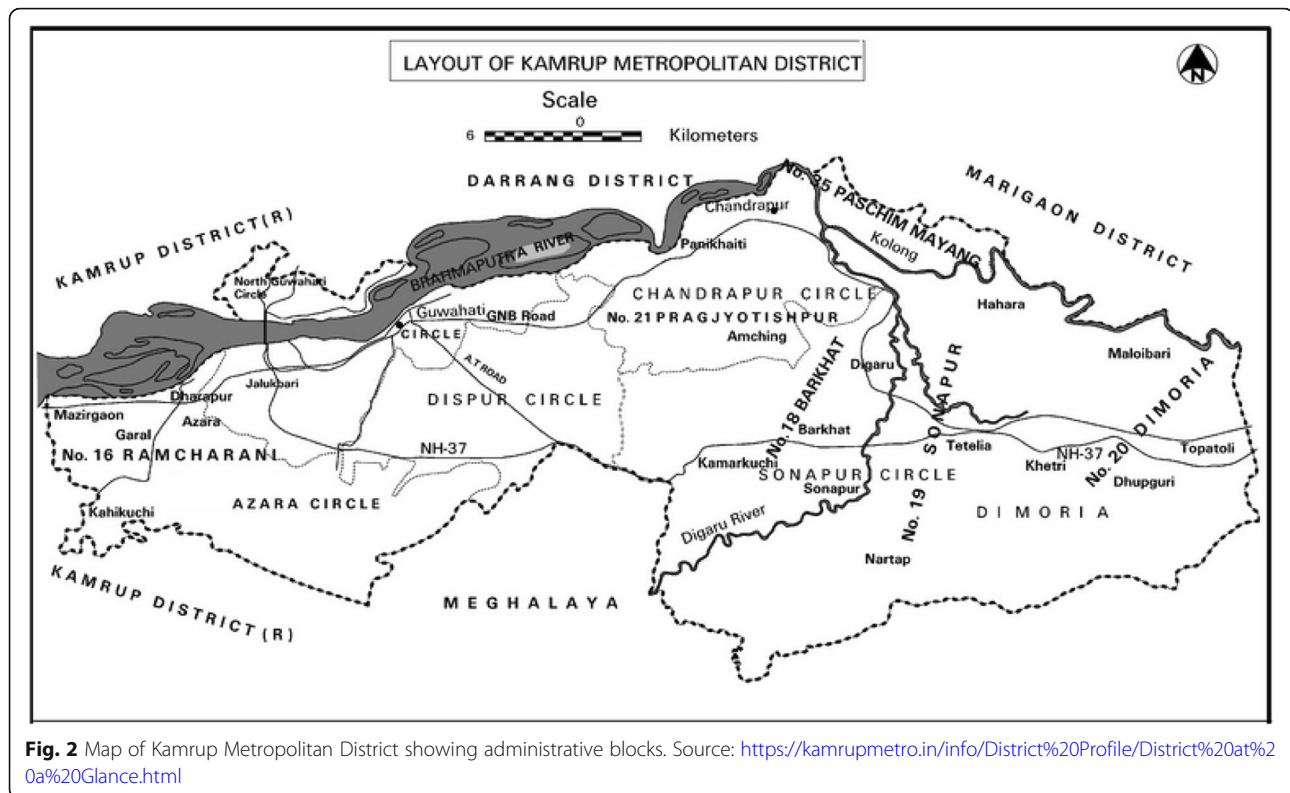


Fig. 2 Map of Kamrup Metropolitan District showing administrative blocks. Source: <https://kamrupmetro.in/info/District%20Profile/District%20at%20a%20Glance.html>

the girls below the age of 18 years and adult women regarding food habits, methods of cooking, dietary intake and nutritional status. A total of 400 females were selected for the study.

Results and discussion

Food habits, eating and cooking practices and folk beliefs were found to be integral part of Karbi community. Food habit means the way by which the people select the food they want to eat which depends on the availability in nature or market and knowledge about the food (green leafy vegetables, herbs, etc.). The nearby forest and hilly terrain of the Karbi habitat of the two blocks provide a good selection of indigenous green leafy vegetables/herbs (*silpat*, *panajari*, *gorjiva*, *semerang tenga*, *bahekata*, *mayong sak* (scientific names are not available)) and fruits like *bael* (*Aegle marmelos*), *leteku* (*Baccaurea ramiflora*), *poniol* (*Flacourtia jangomas*), *rababtenga* (*Citrus grandis*) and *mirika renga/mir tenga* (*Parameria polyneura*). The Karbi women usually go to the nearby hilly areas two or three times per week. *Mayong/mehek* green leafy vegetable is dried and kept for use within 3 months. Other green leafy vegetables are eaten fresh within 2 to 3 days. The green leafy vegetables are kept overnight on the rooftop in a bamboo sieve (*saloni*) so the vegetables remain fresh. They keep the greens wrapped in banana leaf to be used within 2 to 3 days. In most of Karbi households, a homestead garden (called

bari in Assamese) were seen where indigenous vegetables like *kasu* (*Colocasia esculenta*), *dhekia*, (*Diplazium esculantum*), *vedailota* (*Paederia foetida*) *mandhania* (*Eryngium foetidum*), *kasiduria* (*Lindernia ruellioides*) and *matikaduri* (*Alternanthera sessilis*) were grown. Karbi tribe prefers to include indigenous green leafy vegetables and herbs in their everyday diet.

Eating practices among the Karbi women

All Karbi people prefer rice as the staple for meals. The present study depicts that the percentage of eating three times per day was more among all the age groups followed by two times per day. It may be mentioned that eating main meals, i.e. breakfast, lunch and dinner were considered in the study. Taking little snacks and tea were not considered as main meals. In total, 62% of the Karbi women ate three times per day followed by 22.25% who ate two times per day. Only 15.75% ate more than three times per day. The girls below the age of 18 years mentioned that they sometimes skip breakfast before going to school as they become late while going to school. The girls mentioned that they have snacks and relishes like biscuit, chilli pickle and *jhalhuri* (a relish made of puffed rice, peanuts, onion and sprinkled with coriander leaves) with the pocket money they get while going to schools or colleges. Most of the girls do not prefer to carry tiffin with them. The girls who reported to carry tiffin contain cake, biscuit, chips and snacks which is not

a heavy meal. The girls having junk foods outside of home skip their lunch after coming from school or college. Sometimes, they mentioned that if lunch items were not appealing to them, they prefer to take rice with channa or chilli pickle brought from the nearby shops. Arya and Mishra [5] reported that adolescents are now consuming high amounts of foods like Maggi noodles, sandwich and potato chips and replacing the consumption of fruits, vegetables and dairy products. Due to urbanization and good transportation, even in remote places, shops containing potato chips and biscuits were available, making the junk foods an easy option for consumption. The adult Karbi women who had two times main meals mentioned that as they take a heavy breakfast in morning, they prefer to take tea with *muri laddu* (puffed rice balls) or biscuits.

Karbi tribes of Kamrup district were non-vegetarians. Foods which are commonly eaten at meal times were rice, green leafy vegetables, fresh fish, dry fish powder (*hukoti*), dry fish (*oakreng*) and meat. The frequency of consuming most preferred food of the Karbi women is presented in Table 1.

Cooking methods among the Karbis

The most common methods used for cooking was boiling, steaming and roasting in bamboo pipes and banana leaf. The girls of below 18 years mentioned that they like to have foods prepared with oil. So frying was also found as one of the cooking methods among Karbis. Boiling is usually used to prepare vegetables and meat. Steaming is the method which involves use of moist heat. The food prepared with the method of steaming is nutritious as the foods do not come in contact with water directly. So, the water soluble vitamins are retained in the foods. The water vapour is produced from water placed at the bottom of the pan. Steam cooked foods are light, fluffy and easily digestible. Frying method of cooking uses fat or oil as a medium of cooking. Shallow fat frying uses fat as well as water to cook the food. Roasting involves cooking food by dry heat. All Karbis irrespective of their financial status prefer foods cooked without oil. Teronpi et al. [6] studied indigenous knowledge of management of fish resources and revealed that hill Karbis cook fish by *kangthu* and *kemang* method. A study conducted by

Muzaddadi et al. [7] mentioned in a study of ethnic fish product prepared by Mishing tribe of Assam that food processing techniques like drying, smoking and fermentation are compatible means of preserving fish for scarce fish seasons and a partial solution to protein malnutrition.

The *kangthu* and *kemang* method were preferred by Karbis of Kamrup district also. In *kangthu* method, fresh fish is mixed with salt, turmeric and local herbs like *dhaniania* (*Coriandrum sativum* L) or *man dhaniania* (*Eryngium foetidum*). Then, the fish is wrapped in banana leaf and smoked in firewood or roasted in a hot iron pan (*kerahi/tawa*). In *kemang* method, dry fish is mixed with salt, spice, ginger and garlic and put in a fresh bamboo tube with one end closed with nodes. Fresh and delicate lemon leaves are added for flavor. Then, the bamboo tube is roasted over fire. The fish prepared by *kemang* method is a delicacy among Karbis irrespective of any age group.

Dry fish is stored in bamboo tubes for about a year, and this dry fish is called *sukati* (in Assamese language) or *hukati* in Karbi dialect. Karbis put *hukati* in each and every dish prepared from vegetables and green leafy vegetables. During rainy season when the ponds and rivers are flooded, all men and women go for fishing and collect fish in plenty. They dry the fish by putting them in the bamboo shelves (*Bhanglang*) above the fireplace in the kitchen. The fish gets dried and then they put the fish in the bamboo tubes and store it. The dry fish becomes like powder and they put the dry fish powder while cooking any kind of vegetables. *Hukati* have a strong odor, but when it is cooked, it gives a pleasant aroma.

Food practices during menstruation

Women's experience of menstruation is influenced by the way it is understood in the society they live in. Among the Karbi, meat, eggs and chicken were avoided as it was believed that these foods are hot and will cause stomach ache and more bleeding during the period of menstruation. *Hukati* (dry fish) is avoided for the belief that the menstrual blood will smell and so avoided during the entire period of menstruation. Foods such as curd, banana and pineapple are avoided for heavy bleeding. Sour foods as tamarind and pickles were also

Table 1 Frequency of consumption (per week)

Days/week	Rice	Green leafy vegetable	Fish (fresh/dry)	Meat
1–2 days	–	24 (6)*	–	90 (22.5)
3–5 days	–	153 (38.25)	72 (18)	85 (21.25)
6–7 days	400 (100)	223 (55.75)	328 (82)	225 (56.25)
Total	400 (100)	400 (100)	400 (100)	400 (100)

Source: Fieldwork

*Percentages are shown in parentheses

avoided for fear of heavy bleeding and stomach ache. The menstruating girls were also advised to exclude spices, chilli, and pepper due to the belief that these foods will cause stomach cramps. Sharma and Kaur [8] reported that during menstruation girls are advised to avoid hot foods such as goat meat, eggs and chicken as it is believed that this would cause more bleeding. Jasrotia et al. [9] in a study related to various aspects of menstruation revealed that the adolescent girls restricted cold beverages, foods cooked with turmeric and sour food during that period. Adolescent girls of Lamani and Kanjharbhat tribes of Dharwad and Bijapur districts in Karnataka state in India avoided sesame seed, jaggery, sour food and sweets and included lemon juice and coconut water during menstruation period as it reduces stomach pain [10]. Manhas and Sharma [11] in a study related to menstruation among adolescent girls of Jammu in northern India revealed vast majority of girls were not allowed to eat sour food during menstruation with the belief that it causes pain to the stomach. Juyal et al. [12] reported 75.6% of adolescent girls of Dehradun, India, restricted intake of pickles and other sour foods during menstruation.

The present study revealed that during the period of menstruation, fluids such as water and coconut water is advised by the elderly to be included as it is believed that the pain felt due to menstruation is subsided. Inclusion of plain water and coconut water may be good during the time of menstruation as fluid retention is one of the common symptoms before and during the time of menstruation. Coconut water which is rich source of nutrients helps to reduce the fluid retention. White et al. [13] reported fluid retention during menstrual and mid-cycle patterns of menstruation in 765 menstrual cycles in 62 healthy women. Saat et al. [14] studied rehydration after exercise with fresh young coconut water, carbohydrate-electrolyte beverage and plain water and found that fresh young coconut water, a natural refreshing beverage, could be used for whole body rehydration.

The Karbi girls mentioned that fermented rice (*poita bhat*) is included for the belief that it keeps the stomach cool. Nutritionally, we observed that meat, egg and curd which are good sources of protein are avoided during menstruating period, but it is heartening to note that instead of non-vegetarian items, balance in protein is maintained by including vegetarian soups and lentils. Fermented rice (*poita bhat*) which is a very good source of nutrients is included during that period. Bhattacharyya [15] reported in a study conducted by Assam Agricultural University, Jorhat, on fermented rice (*poita bhat*) and found that when cooked rice is fermented for 12 h, the iron, potassium and calcium content increased. *Poita bhat* is reported to have cooling properties and produces a soporific effect.

Despite the avoidance of some non-vegetarian foods during the menstrual periods, the protein intake was good as the Karbi tribe includes fresh fish or dry fish in everyday diet.

Much emphasis is given on protein intake as during the adolescent period protein is required more for growth and development. The vegetables and fruits which were avoided are very few and is not a matter of concern. Instead, lots of vegetables and vegetable soup is advised to include during that period which meets the requirement of vitamins and minerals.

Food practices during pregnancy

Pregnancy period is another important phase in women's life. Nutritional care is required to attain a healthy baby. A focus group discussion was conducted among the pregnant women for the inclusion and exclusion of foods during the entire period of pregnancy. Meat especially pork was avoided from the conception till delivery with the belief that these are hot foods. Egg which was also considered as hot food was avoided for first 3 months for the belief that it will cause bleeding. Jeffery et al. [16] reported that meat was avoided by pregnant women in Bijnor district of Uttar Pradesh, India, as the women believed that meat is a hot food which can induce abortion. The Karbi women mentioned that duck and pork are avoided, but instead, they include a special food containing wild bird or country chicken. The dish is very nutritious which is prepared by adding local herbs like asiatic pennywort (*Centella asiatica*; *ass. manimuni*) and shunk vine (*Paederia foetida*; *ass. vedailota*) with spices. Other kinds of animal foods such as fish were included from conception, and egg was included after first trimester till delivery. So, within the permissible limits of folk beliefs of food, protein-rich animal foods are included which helps in proper growth and development of the foetus. Fish like *borali* (*Aspidoparia morar*), *mirika*, (*Cyprinus mrigala*) and *kusia* (*Synbranchus marmoratus*) were avoided up to 3 months of pregnancy because of vomiting tendency but other fishes are included. Karbis have a habit of including dry fish everyday which fulfils the requirement of protein among pregnant women. Salt was avoided for the belief that it increases blood pressure. Alkali (*Khar*) is relished by Karbis in every dish for the belief that it normalizes digestive disorder and balances the acid-alkali range in the body. However, all pregnant women avoided it for the belief that it increases the blood pressure and reduces the nutrients found in the food. Research studies conducted on *Kolakhari* (prepared from the ashes of the dried peel of *Bhim-kol* (*Musa balbisiana*)) reported the presence of potassium and sodium in *Khar* is beneficial for hypertensive patients. Neog and Deka [17] mentioned in a study that *kolakhari* is an excellent salt substitute, with potassium to sodium ratio in the same breath as in nature, derived from

banana plant. The salt substitute contains nearly 46% of potassium and 2.6% of sodium. The presence of certain beneficial metals in trace level is an additional feature of the salt substitute. Deka and Talukdar [18] studied the chemical and spectroscopic properties in *kolakhar* and found that potassium, sodium, carbonate and chloride are major constituents present in *kolakhar* along with trace elements. But too much use of *khar* in every dish may increase the blood pressure level. So, Karbi pregnant women avoided *khar* and limited salt during entire period of pregnancy. These alkalis are reported to be the cause of rare acidity trouble.

Papaya and pineapple were avoided from conception till delivery for fear of abortion. Although avoidance of papaya and pineapple during pregnancy is followed in many societies since time immemorial, it is proved scientifically in research studies. Adebisi et al. [19] revealed normal consumption of ripe papaya during pregnancy may not pose any significant danger; however, the unripe or semi-ripe papaya (which contains high concentration of the latex that produces marked uterine contractions) may have an adverse effect during pregnancy and should be avoided. Saikia [20] in a study among tea garden tribal women reported that majority of the pregnant women consume seasonal locally available fruits, wild and cultivated green leafy vegetables and other grown vegetables and avoided papaya and pineapple with the belief that it might abort the baby. The present study also found that Karbi pregnant women included many indigenous green leafy vegetables available in their area. Marak [21] in a study of Garos found that pregnant women of Garo hills avoided egg, pineapple, pumpkin, papaya and chillies during pregnancy period as it is believed that these foods may lead to spontaneous abortion and stillbirths. Another study undertaken by Ferro-Luzzi E.G [22] in Tamil Nadu showed that 82% women avoided papaya during pregnancy. Harsoliya et al. [23] in a study on food avoidance during pregnancy revealed scientifically some foods that may hamper during pregnancy such as papaya (enzyme papain may generate heat and may cause abortion) and pineapple (enzyme bromelain and high sugar content of pineapple may induce abortion and increase risk of developing gestational diabetes).

All sour foods are restricted till delivery of the baby for fear of miscarriage and bleeding. Too much of sour foods may cause flatulence during pregnancy, so it is advised by elderly to avoid them. Harsoliya et al. [23] revealed that tamarind is a sour food containing tannins named phlobatannins which may cause nausea and vomiting. It is surprising to note that some of the folk beliefs in food which are followed from the time of ancestors were scientific, but the elderly people may not be able to give any scientific explanation.

Among vegetables, the Karbi pregnant women reported that they avoided plantain flower (*kaldil*), bottle gourd (*jatilao*) and white gourd (*kumura*). Bottle gourd and white gourd was avoided up to delivery for fear of cough and cold since they consider it as cold food. Plantain flower which is stated to be a good source of iron was avoided during pregnancy for the belief that the foetus will grow "giant" like the plantain flower. The avoidance can be stated as beneficial for the pregnant mother as iron which is found in food are present in two forms, heme and non-heme iron. Heme iron, which makes up 40% of the iron in meat, poultry and fish, is well absorbed. Non-heme iron, 60% of the iron in animal tissue and iron in plants is less well absorbed. Plantain contains non-heme iron which is not absorbed in the body without vitamin C. Moreover, vitamin C-rich foods or sour foods are advised to avoid during pregnancy. As such, plantain flower does not provide much nutrients, and so, the age-old folk belief to avoid them seems to be correct. The high fibre content of plantain flower may also make the stomach bulky and upset. Bitter vegetables were restricted for feeling of nausea and headache respectively. Sugarcane was avoided for the first 2 months of pregnancy for fear of abortion.

In every culture, food plays an important role especially during the time of physiological changes which happens in women's life. People select foods which is culturally acceptable. Studying the folk beliefs of food is an important aspect to know how food helps to remain healthy during the period of menstruation and pregnancy. In the present study, folk beliefs of food among Karbis were studied. It can be concluded that inclusion and exclusion of certain foods during the two physiological conditions lead them to remain healthy. Thus, there is an urgent need to save and manage the intangible cultural heritage and beliefs of food of the Karbis as the foods included are rich in nutrients and food avoided are helping the women to be in good health.

Acknowledgements

A preliminary version of the paper was presented at International Seminar on "Cultural Heritage Management: A Global Perspective," Asiatic Society, Kolkata, 26–27 March, 2015. The authors thank the organizers for their valuable suggestions.

Authors' contributions

Both authors have contributed to this paper. Both authors read and approved the final manuscript.

Funding

No fund has been taken from any source.

Availability of data and materials

Data will be made available on request.

Competing interests

The authors declare that they have no competing interests.

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Received: 30 May 2019 Accepted: 12 September 2019

Published online: 22 November 2019

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