PRINT: ISSN 0973-5070 ONLINE: ISSN 2456-6772
Ethno Med, 15(1-2): 13-29 (2021)
DOI: 10.31901/24566772.2021/15.1-2.621

Indigenous Knowledge and Practices Related to the Reproductive Mother-Child Health Issues of the Karbis in Karbi Anglong, Assam

Somenath Bhattacharjee

Department of Anthropology, Assam University, Diphu Campus, Diphu, Karbi Anglong 782 462, Assam, India
Contact: 9475393104; 9401767410, E-mail: bhattacharjee_somenath@rediffmail.com

KEYWORDS Culture. Ethnic Diet. Ethno-gynaecologists. Remote Villages. Taboos. Traditional Healer

ABSTRACT Any culture has its own practices to heal different health disorders and diseases. Any culture has evolved certain system of medicine to treat diseases in its own way. This is well variable across groups. It can be noted that disease and ailment, particularly in the simple societies is not an isolated phenomenon, rather they are interwoven with the environment, particularly the forest ecology. Their traditional healing are based on deep observation of ethno-ecology. The present study has been done on the Karbi tribal group of Karbi Anglong, Assam. The district is rich in biodiversity. Such resources are interwoven to their livelihood. The Karbi people had a strong belief that different malevolent supernatural agencies can create tremendous harm and allied misfortune to the reproductive mother as well as to the new born. The concerned people are very much psychologically dependent on the traditional healers and ethno-gynaecologists for the treatment related to such cases. The concerned healers use several locally available plant resources for such treatment. Meanwhile, particularly in the cases of reproductive mother-child health, a number of floral and faunal resources are also used by them, as a part of their ethnic diet. The present study has the prime objective to reveal the relationship between ethno-ecology and indigenous knowledge of the health care system of the Karbis, particularly related to reproductive mother-child health issues. The study has been primarily conducted through intensive fieldwork. Several anthropological methods are used in this regard to collect primary data.

INTRODUCTION

Any culture has its own practices to heal different health disorders and diseases. Any culture has evolved certain system of medicine to treat diseases in its own way. This is well variable across groups. It can be noted that disease and ailment, particularly in the simple societies is not an isolated phenomenon, rather they are interwoven with the environment, particularly the forest ecology. Their traditional healing are based on deep observation of ethno-ecology (Chaudhuri 2003: 17-24). Srivastava (2020), analyzed in detail about the cultural response related to stigma under the pandemic situations and its impact on health seeking practices.

Health and reproductive health has been defined as a complete physical, mental and social wellbeing and not merely the absence of reproductive disease or infirmity. "It deals with the reproductive processes, functions and system at all stages of life. Reproductive health includes sexual health, the purpose of which is the enhancement of life and personal relations, and not merely counselling and care related to reproduction and sexually transmitted diseases" (Morgan 1990:947). Traditionally, in Indian societies, women are, by and large, viewed only as reproductive agents and their fertility is generally prized, as pointed out by Mandelbum (1970), such that the "mark of her success as a person is her living and thriving children". The mother is the prime person who provides childcare, nutrition, hygiene and all sorts of primary health care.

It would be a misconception of childrearing, if one considers overall care of a child only after birth. Since, proper growth and development of a child depends on its health status at birth and as it is very closely associated with its prenatal and natal period, hence, care during these periods is also assumed to be importance. Direct care cannot be given to the child during the prenatal period and it depends completely on its mother, therefore, care of the mother in all aspects is very necessary. Childrearing, therefore, encompasses the care of the mother during pregnancy and postpartum period, including nutritional and health care, sleep and rest, care of the newborn and

young children, such as breastfeeding, weaning, complementary feeding, health care, toilet training, recreation, etc. Moreover, proper development of a child largely depends on its general health status especially in the early part of childhood. Proper nutrition with the duration of breastfeeding, timely weaning, immunisation, treatment of ailments, etc., and social beliefs are the utmost important factors during this formative stage. But, these are often interacted by cultural norms and socio-economic status of the family. India is considered as a sub-continent with rich and distinct cultural wealth. Cultural traits of the tribal population of the country are unique by itself. In Assam, although many studies have been undertaken on the tribal communities, yet studies emphasising on childrearing are rather scanty. Nutritional status of Adivasis, the tea tribes of Assam, was not good as reported by many studies. Gogoi and Ahmed (2007) studied the birth weight among the tea tribes of Dibrugarh from nutritional perspective and revealed that sixty-one percent of babies were born with birth weighing less than 2.5 kg. Another finding was also contrary to findings of the nutritional status of pregnant women of Chaigaon block of Kamrup district, which Mahanta et al. (2012) reported. The study concluded that forty-eight percent of pregnant women were having a high level of under-nutrition in low socioeconomic groups. Therefore, to understand these, this attempt has been made to undertake the study relevant to prevailing childrearing practices among the Karbi tribal population of Assam. From this perspective, the present study is concerned to understand the pattern of the pregnancy care, care of the newborn, infant feeding, weaning, treatment and preventive aspects of health, family welfare, nutritional status, toilet training, socialisation, play, etc. among the Karbis. The significance of several natural resources in the material culture of the Karbis has been studied by Bhattacharjee (2015). The sacred grooves and their socio-religious as well as socio-cultural significance was studied by Bhattacharjee (2015). Traditional health care practices of the Karbis and the role of different indigenous medicinal resources was studied by Bhattacharjee (2015). The ethno-religious aspects of medicinal plants in Manipur were studied by Bhattacharya (2016).

Objectives

The prime objective of the present study is to:

a) Reveal the co-relation between ethnoecology with indigenous knowledge associated to the reproductive mother-child health care system.
b) Find out the different traditional healing practices associated with such cases, to redress the ailment of the people.
c) Know about different categories of traditional healers, who are associated with such practices.

METHODOLOGY

The present study has been done on the Karbi tribal group of Assam in northeast India and in this concern exclusive Karbi villages were selected. To conduct the present study a pilot survey was conducted in November 2014 to select the villages. The study was conducted up to May 2017. The villages were selected from every block under every subdivision of the Karbi Anglong district. From each block the first two villages, which have a greater number of Karbi population, have been selected. Meanwhile, the sub divisions, their concerning blocks and studied villages are gradually more distant from the district headquarter of Diphu and having a gradually lesser chance of access over Western medicinal facilities as well as better scope to avail traditional health care practices (Table 2).

Total sampling method was applied to the concerned settlements and primary data was collected from all the studied families to know about the prenatal, childbirth and postnatal health care practices. The study was conducted among the Karbi tribal group on 685 families with a population of 4,749. The studied families were selected on the basis that in such families at least one child member (aged between 0-14 years) was present. Along with that, data was collected from the midwives, traditional medicine man, magico-religious healers to know about the studied issue in detail. The oral interaction with the studied people, was conducted through Assamese language only. Out of the total studied populations, there were total 2,396 males and 2,353 females while the sex ratio is 982. From the present study

on a total of 685 families, there was total of 1,805 mothers and the total number of children was 1,075 (in between the age group of 0-14 years).

The fieldwork was conducted through three major divisions**.** Each division was associated with two to three times of fieldwork, according to the requirement. Anthropological research methods like observation, case study, interview and key informant interview have been applied to collect the required primary data.

Division 1: Foremost, Preliminary Census Schedule (PCS) was taken to know about the demographic composition of the studied people and to collect the village level information.

Division 2: Among the total studied population, case studies on were taken on the basis of selected criterion from the women, related to the issues of child mortality and other pregnancy related complications. Again, selected case studies were taken on selected children, suffering from various ailments and ill health conditions. It was taken on the mothers, who were associated with prenatal, pregnancy and postnatal health care practices, as well as on their family members. It was focused to know about their ethnic knowledge base associated with the reproductive mother-child health aspects. A special focus was given on the multifarious complications associated with the reproductive mother-child health issues and their probable method of treatment. Further, it was focused to know about the role of the family members in such cases. Meanwhile, special attention has been given on the result of such treatment in the concerned cases.

Division 3: Interviews were taken from the key informant, traditional healers, aged male and female members of the studied families to know about their method of treatment and healing practices associated with reproductive mother-child health issues. It can be represented through the Table 1.

The collected data was analysed in detail to reveal the correlation between ethno-ecology with the cognitive aspects of reproductive mother-child health issues. It focused special attention on the indigenous knowledge of the studied people for the sustainable utilisation of such resources.

RESULTS AND DISCUSSION

Perception of Health by the Karbis

The Karbis believed in multiple deities and regard all objects on earth as having divinity or possession of supernatural power and therefore

Table 1: Methods applied and result obtained

Method applied	*Objective*	*Sample*	*Result*
Preliminary Census Schedule	To know about the different levels of complications and ill health conditions at the individual and familial level.	4749	Different cases related to reproductive mother-child health issues were found.
Case studies	To know about the inter-relationship between ethno-ecology with the indigenous knowledge of reproductive mother-child health care system.Detail description about complicated cases, method of treatment and result.	256	Issues were known in detail. Methods of treatment were known elaborately and the result of treatment, cultural and psychological dependence on the traditional healers was known.
Interviews	On the traditional healers, ethno-gynaecologists, to about their detail method of treatment and allied healing processes.	63	Indigenous knowledge and traditional healing practices related to reproductive mother-child health issues. Dealing with complications and curing the patients from their different ailments.

Table 2: Selection of studied villages

Sub- divisions	*Blocks*	*Villages studied*	*Specific criteria*	
Diphu	Lumbajong, Howraghat, Samelangso, Langsomepi	2 villages from each block	Near to district headquarters Diphu town	
Bokajan	Bokajan, Nilip, Rongmongwe	2 villages from each block	Far from district headquarters Diphu town	
Hamren	Rongkhang, Sochen, Chinthong, Amri	2 villages from each block	Farthest from district headquarters Diphu town	
Sub -divisions	*Blocks*	*Villages studied*	*Distance from district headquarter of Diphu town (in Km.)*	*Families studied*
Diphu	Lumbajong, Howraghat, Samelangso, Langsomepi	8	0-50 Km	250
Bokajan	Bokajan, Nilip, Rongmongwe	6	100-150 km	240
Hamren	Rongkhang, Sochen, Chinthong, Amri	8	200 km and above	195
Total	11	22		685

worship hills, mountains, rivers, etc. They believed that diseases were caused by different malevolent spirits and by appeasing the benevolent spirits it could be redressed. Karbis regarded both binary spiritual concepts as possessing divinity, which could harm as well as bring peace and prosperity to the people such as good health, wealth, favourable weather, etc. Karbis worshipped household deities called *Hem Angtar* and these deities were propitiated annually. There were deities that were propitiated as and when required were called *Habit ase* (non-household gods). The disease condition or the notion of illness was being referred by the Karbis as *se kelong*. When a person falls ill, for example, after coming from the forest, the household members attribute the cause due to the encounter of evil spirits and initiates propitiation of the spirits. In case the patient does not respond to normal traditional treatments, the household members seek the help of a wise man to ascertain the cause of the illness. The wise man through divination identifies the deity responsible for the illness and suggests certain rituals for recovery of the patient. This act of divination is called *Sang Kelang.* The cause of illness was specifically associated with the worship and appeasement of different benevolent spirits and to redress the malevolent spirits. The state of health of the Karbis was associated with spiritual, mental and psychological well being. The concept of health among the Karbis of the studied villages is termed as *saisto* and *sehera*, which refers to the adequate function of their body. It was a state complete physical well being and free from health disorders and allied misfortunes.

Diseases Prevalent Among the Studied People

Detail record of the disease affected people were collected from the studied villages. The cause of diseases were primarily natural. The incidence of fever, anaemia, malaria were well prevalent. Meanwhile dental fluorosis, was well noticable as well (Table 3).

In the studied areas, different waterborne diseases like dysentery, jaundice and diarrhoea were well prevalent. Along with that, malaria was also well noticeable (Table 3).

Most of the studied people had a strong belief that supernatural agencies were primarily responsible for different diseases, thus related to their treatment, they were primarily depended on their traditional healers like a traditional medicine man, magico-religious healers, etc. On the other hand, the people who had the idea about the natural cause of diseases, were dependent on Western medical practitioners of civil hospitals, PHC and at least on quacks (Table 4). It can be noted that, the concerned people had a deep psychological and cultural dependence on their tradi-

Table 3: Diseases, their local name and their English equivalent among the Karbis

S. No.	*Local name of the disease*	*English equivalent*
1	*Apouk Kissu*	Common dysentery
2	*Ai bhagoboti allado*	Chicken pox
3	*Pak- Kepavi*	Diarrhoea
4	*Khundamaar*	Stomach ache
5	*Assey*	High fever
6	*Hapani*	Asthma
7	*Kukurrikona*	Night blindness
8	*Ingthadob*	Scabies
9	*Senduriya*	Red rashes
10	*Kholpiya*	Skin boil
11	*Borolla*	A painful skin boil bigger in size
12	*Chinjam*	Flu
13	*Ase-jang-je*	Constipation
14	*Samayaad*	Jaundice
15	*Akupali*	Severe head ache
16	*Susmo*	Pain in the joints

Source: Field study 2015-2017

tional healers due to their cultural similarities and language to express their own sufferings. However, in case of non-Karbi Western medical practitioners it was found as difficult, at least in case of the studied people.

However, in several cases, it was noticed that, for example, an educated couple of Diphu town, had a strong belief in their traditional healers. It was primarily because of their intercultural affinity. During the study it was noticed that, particularly the Karbi womenfolk were very shy in nature and used to say very few words to the outsiders. Most of the Western medical practitioners were from another ethnic and cultural background. On the other hand, the Karbi women were most frequent conversing in their mother tongue. Thus, they could hardly explain about their ailment to any other people, other than the traditional healers that used to live in their village or nearby. They were easily accessible by anyone and could be easily communicated with in the mother tongue. Thus, they prefer to consult their native healers in case of different ailments.

It was the main reason why even the people who were dwelling in Diphu town or adjacent villages had the first preference for their traditional method of treatment (Table 5). Such native healers either used to give them herbal medicines or conducted different rituals to appease the benevolent deities and to redress the effects of malevolence on the affected people.

It has been noticed that, in the studied area, the success rate of the traditional method of treatment was very satisfactory and very few were not cured of their ailments. On the other hand, in Western medical practices non-curability was well noticeable as well as the success rate was also not similar as in case of traditional methods. It may be because, in most of the cases, the economic crisis of the people hindered them to complete the entire medical course. Even the communication problem emerged as a prime hindrance for the people to go to Western medical centres. As a result, the cases of Western medical drop out were very common among them. On the other hand, the traditional healers used to remain in their village and they did not have to purchase any medicine from the said healers. Thus, it used to save their working schedule and undesired financial expenditure (Table 6).

Table 4: Preference of first treatment among the studied population

Sex	*Traditional*	*Western*	*Total*	*If traditional*				*If western*		
				Medicine man	*Magico-religious healer*	*Local indigenous*	*Total*	*Doctor*	*Quack in medicine shop*	*Total*
Male	1451 (60.56)	945 (39.44)	2396 (100.00)	752 (51.83)	598 (41.21)	101 (6.96)	1451 (100.00)	497 (52.59)	448 (47.41)	945 (100.00)
Female	1481 (62.94)	872 (37.06)	2353 (100.00)	792 (53.48)	602 (40.65)	87 (5.87)	1481 (100.00)	452 (51.83)	420 (48.17)	872 (100.00)
Total	2932 (61.74)	1817 (38.26)	4749 (100.00)	1544 (52.66)	1200 (40.93)	188 (6.41)	2932 (100.00)	949 (52.23)	868 (47.77)	1817 (100.00)

Source: Field study 2015-2017

Table 5: Preference of first treatment in co-relation to the distance

Sub-divisions	*Distance from district headquarters of Diphu town (in Km.)*	*Families studied*	*Method of treatment*				*Total*	
			Traditional		*Western*		*Male*	*Female*
			Male	*Female*	*Male*	*Female*		
DIPHU	0-50 Km	250	441 (50.63)	406 (47.10)	430 (49.37)	456 (52.90)	871 (100.00)	862 (100.00)
BOKAJAN	51-150 km	240	434 (51.24)	483 (59.12)	413 (48.76)	334 (40.88)	847 (100.00)	817 (100.00)
HAMREN	151-200km and above	195	576 (84.96)	592 (87.83)	102 (15.04)	82 (12.17)	678 (100.00)	674 (100.00)
TOTAL		685	1451 (60.56)	1481 (62.94)	945 (39.44)	872 (37.06)	2396 (100.00)	2353 (100.00)

Source: Field study 2015-2017

Table 6: Result of treatment

Sex	*Traditional methods*				*Western methods*			
	Cured	*Recovered*	*Not cured*	*Total*	*Cured*	*Recovered*	*Not cured*	*Total*
Male	1073 (73.95)	370 (25.50)	8 (0.55)	1451 (100.00)	453 (47.94)	106 (11.21)	386 (40.85)	945 (100.00)
Female	1154 (77.92)	323 (21.81)	4 (0.27)	1481 (100.00)	406 (46.56)	116 (13.30)	350 (40.14)	872 (100.00)
Total	2227 (75.95)	693 (23.64)	12 (0.41)	2932 (100.00)	859 (47.28)	222 (12.22)	736 (40.50)	1817 (100.00)

Source: Field study 2015-2017

The Karbis of the studied villages had several specialists or healers. As per the study, traditional healers among the Karbis can be grouped into *Bez, Uche, Kurusar* and *Kobiraj* ethno-gynaecologists (Table 7).

Issues Related To Reproductive Mother-Child Health

1. Gynaecological Problems

Among the studied Karbi women and girls, different gynaecological problems and symptoms were noticed (Table 8). The table shows that the frequency of *bogasap* is the highest in the studied villages of Karbi Anglong district followed closely by *Avi patbek atbekthe* and *Avijangpit lu*. The incidence of *khorai* and *akrang* was also noticeable in the studied villages. For the treatment of gynaecological problems, the Karbi women of all the studied villages relied primarily on

Table 7: Different traditional healers of the Karbis

Name	*Sex*	*Specialization*
Bez	Male	Local herbalist and priest.
Ucheey	Male	Associated with Socio-religious performances to cure illness like chicken pox
Kabiraj	Male	A person who has adequate knowledge about locally available floral and faunal resources, which are associated with medicinal values, to cure the patient from different natural ailments.
Kurusar	Male	Magico-religious healer, priest and herbalist as well. Deals with reproductive mother-child health issues also.
Thekeraay	Male	Magico-religious sorcer, herbalist, deals with reproductive mother-child health issues as well.
Deori	Male	Priest
Ethnogynaecologist	Female	Herbal specialist and midwife who treats gynaecological problems and reproductive mother-child health issues only.

Source: Field study 2015-2017

Table 8: Gynaecological problems of the Karbi women and girls

Local term used by Karbi women of Karbi Anglong District	*Symptoms*	*Affected female*	*Total considerable female*
Khorai	Burning sensation while urinating	22 (1.21)	1819 (100.00)
Booga saap	White discharge	1317 (72.40)	
Avipatbek abut apok kacherot	Menstrual cramps	24 (1.32)	
Avijangpit lu	Excessive bleeding during menstruation	169 (9.30)	
Avi patbek atbekthe	Irregular menses	213 (11.71)	
Akaikimi wangtve detlu	Absence of menstruation	19 (1.04)	
Akraang	Vaginal dryness	9 (0.50)	
Naari lora	Abdominal pain	33 (1.81)	
Naari baagora	Prolapse in uterus	5 (0.27)	
Abaang ki unbona oorah	Suddenly menopause	6 (0.33)	
Pang kleng or *Aso have*	Sterility or the inability to conceive	2 (0.11)	

Source: Field study 2015-2017

the ethno-gynaecologists and the herbs as advised by them. They were quite reluctant to visit the Primary Health Centre.

From the field study, it was found that the age of menarche for the studied Karbi women started from 10 years of age and completed within 13 years. It was found that among the total married women the age at marriage was primarily within 20 years, which used to start from 15 years of their age. Accordingly, the age of first conception starts from 16 years and within 24 years of their age. Around ninety-seven percent of those who ever became a mother had more than one child, while in ninety percent of such cases the concerned couple had kept the birth interval up to 2 years. Significantly in seventy-eight percent cases, childbirth had taken place at home under the care of midwives and ethno-gynaecologists. It can be noted that in the villages, which were gradually more distant from the district headquarter, the cases of childbirth were preferred more at home, under the care of midwives and ethno-gynaecologists, both before and after the pregnancy period.

2. Folk Beliefs of Foods in the Context of Menstruation

It was found that warm foods such as meat, eggs and chicken were to be avoided, as it might cause stomach ache and more bleeding during the period of menstruation. It was believed that, *Hukati* (dry fish powder) may cause smell in menstrual blood and so it was to be avoided during the said period entirely. Foods like as curd, banana and pineapple could cause heavy bleeding and accordingly avoided. Sour foods like tamarind and pickles were equally avoided, as they used to cause heavy bleeding and stomach ache. Spices, chilli and peppers were suggested to exclude by the menstruating girls, as those might cause stomach cramps (Table 9). It was reported that, by avoiding such diets, it helped the concerned girls. On the other hand, if they had violated it, the result was different disorders.

The present study also covered the foods included during the period of menstruation. During the focus group discussion, the girls who were below the age of 18 years mentioned that coco-

Table 9: Foodstuff avoided during menstruation

Food stuff	*Period of restriction*	*Folk belief*
Non-vegetarian (meat and egg)	First two days	Stomach ache, menstrual bleeding will increase
Spices, chilli, pepper	First two days	Stomach cramps
Banana, pineapple	Entire period of menstruation	Heavy bleeding
Sour foods (tamarind, pickle, curd, etc.)	Entire period of menstruation	Heavy bleeding and stomach ache
Dry fish (*hukuti*)	Entire period of menstruation	Foul smell of menstrual blood

Source: Field Study 2015-2017

nut water, non-vegetarian and vegetarian soups, *dals*, hot tea, fermented rice and fresh fish were included especially during the period of menstruation apart from the foods they usually consumed (Table 10). Fluids such as water and coconut water were advised by the elderly to be included, as it was believed that the pain felt due to menstruation was subsided. Hot vegetarian and non-vegetarian soups, tea, dal and fresh fish were included more, as it was believed that it reduced the abdominal pain. Meanwhile, the nutritional balance of the menstruating period was maintained through non vegetarian soups and pulses. It was believed that, fermented rice (*poita bhat*) was used to keep the stomach cool and equally a good source of nutrients; so it was prescribed during the menstruating period.

3. Folk Beliefs of Foods Related to Pregnancy

Pregnancy period is one of the most crucial phase, in the life of a woman. Adequate nutritional support in terms of food is earnestly required to give birth to a healthy baby. Related to inclusion and exclusion of foods during the entire period of pregnancy, for the concerned women, focus group discussion were conducted. The Karbi women strictly avoid duck and pork, as both of them contain high fat content. Avoiding pork during pregnancy may be beneficial, as if pork is not cooked properly it may affect the intestines and may cause stomach disorders. Usually, pork is contaminated with bacteria (*salmonella, S. aureus,* etc.), which are killed by cooking the food well in high temperature. Fish like *borali, mirika* and *kusia* were avoided for ninety days of pregnancy to avoid the vomiting tendency. However, all other fishes may be consumed. Salt was restricted for the belief that it causes giddiness. However, during pregnancy salt used to be avoided, because it could increase the blood pressure and reduces nutritional values of any food item. Further, to avoid any sort of miscarriage and bleeding any minimum sour food was strictly avoided. It has been reported that, during the pregnancy period, the Karbi women, used to avoid plantain flower (*kaldil*), bottle gourd (*jatilao*), ash gourd (*kumura*) and bitter vegetable especially bitter gourd, as they consider those as a cold food which may cause cold and cough to them. Due to the fear of miscarriage, they use to avoid sugarcane as well. After gynaecological consultation, it was stated that during the first few months of pregnancy, sugarcane juice might induce hyperglycaemia, which may hamper the foetus leading to miscarriage (Table 11). Meanwhile, it was found as significant that, in the traditional Karbi knowledge, such sorts of scientific knowledge were well prevalent till today and they used to practice it very seriously.

Non-vegetarian foods and indigenous green leafy vegetables were included by the Karbi women during pregnancy period and they believe these foods were beneficial for the health of the baby as well as the mother. They used to prefer a special diet, prepared by local chicken with local herbal and species like Asiatic pennywort (*Centella asiatica and Ass. manimuni*) and shunk vine (*Paederia foetida* and *Ass. vedailota)*. The dish was mentioned as very nutritious and healthy and it was included from the second trimester till delivery very frequently (twice or thrice a week). The Karbis used to give their pregnant women boiled egg, as a source of protein rich food, for the proper growth and development of foetus. All types of green leafy vegetables, which were very good sources of vitamins and minerals were included every day in Karbi pregnant women's meals (Table 12). It was reported that such ethnic diets were ultimately beneficial for the concerned

Table 10: Foodstuff included during menstruation

Foodstuff	*Period of inclusion*	*Folk belief*
Coconut water	First two days	Menstrual pain is subsided.
Soups (non- vegetarian, dal, vegetable, etc)	First two days	Reduces abdominal pain
Fermented rice (*poita bhat)*	Entire period of menstruation	Keeps stomach cool and reduces abdominal pain
Fresh fish	Entire period of menstruation	To get energy

Source: Field Study 2015-2017

Table 11: Foodstuff avoided during pregnancy

Foodstuff	*Period of inclusion*	*Folk belief*
Duck and pork	Entire period of pregnancy	High fat, fear of difficulty during delivery.
Fish (borali, mirika, kusia)	Entire period of pregnancy	Hot food, high blood pressure and some old ailments may come up. Induce vomiting.
Papaya	Entire period of pregnancy	Fear of miscarriage
Pineapple	Entire period of pregnancy	Fear of miscarriage
Sour foods	First three months and last two months	Fear of miscarriage
Sugarcane	First two months of pregnancy	Fear of miscarriage
Egg	First three months of pregnancy	Fear of nausea and bleeding as considered as hot food
Plantain flower	Entire period of pregnancy	The foetus will be giant like flower of plantain plant
Bottle gourd and ash gourd	Entire period of pregnancy	Cold food, the mother may suffer from cold and cough.
Bitter vegetable	First two months and last two months	Nausea, headache and gas retension
Alkali (*khar*)	Entire period of pregnancy	Hypertension and the mother will not get proper nutrition from food.
Salt (limited)	Entire period of pregnancy	Giddiness

Source: Field Study 2015-2017

Table 12: Foodstuff included during pregnancy

Foodstuff	*Period of inclusion*	*Folk belief*
Local chicken/ bird with herbs	From second trimester to end of pregnancy	Help the foetus to grow and for health of the mother
Egg	After third month of pregnancy	For the health of the mother as well as the foetus
Fish	Entire period of pregnancy	For the health of the mother as well as the foetus
Dry fish	Entire period of pregnancy	To get nutrients
Indigenous green leafy vegetables	Entire period of pregnancy	Health of the mother and growing baby

Source: Field study 2015-2017

women folk, for a safe and secured pregnancy and childbirth, to a great extent. Most importantly, those were available in their close vicinity and without any economic burden on the studied people.

4. Fish as Ethno Medicine

The Karbis used the body parts of different fishes to cure several ailments, such as cough, anaemia, etc. for the reproductive mothers (Table 13). Some fishes were avoided during certain illnesses for example among the Karbis, the patient suffering from throat problem, goitre or leprosy is barred from eating scaled fishes. Such resources were easily available in their surrounding water bodies and need not to be purchased against economic burden.

5. Herbal Remedies

Among the Karbis several locally available medicinal plants were used to cure a number of diseases and ill health conditions to the reproductive mothers, after the childbirth and for the new born babies (Table 14). During the period of study from 2015-2017, there were a total of 72 Karbi who were female were pregnant and had given successful birth to their children. It was found that, all the concerned women had given birth to their babies having normal birth weight. From the food habits and nutritional status, it

Table 13: Utilization of locally available fishes by the Karbi people

S. No.	*Scientific name*	*Local name*	*Parts used*	*Disease condition*	*Application*
1.	*Danio aequipinnatus*	*Nune*	Whole fish	Pregnancy complications	The boiled fish is consumed regularly.
2.	*Monopterus cuchia*	*Kumchirui*	Whole fish or raw blood	Anaemia during pregnancy	Raw blood taken orally.
			Whole fish/ blood	Kalazar	Small sized raw fish is taken orally or fresh blood of the fish is consumed.
			Blood	Entry of leech	Fresh blood is consumed raw as tonic for removal of leech from rectum/ anus.
3.	*Puntius* sp.	*Ok-puthi*	Head	Night-blindness to the baby in womb	Cooked head is taken regularly.
4.	*Clarius batrachus*	*Nagur*	Whole fish	Small pox and measles of the pregnant women.	Cooked fish is eaten.
5.	*Mystus* sp.	*Tengera*	Whole fish	Small pox and measles to the new born child.	Cooked fish is eaten.
6.	Any hillstream fish		Belly	Prevent swelling on injury wounds	The affected area is bandage with fish belly and kept for 2-3 days.
7.	*Channa gachua*	*Ok-langso*	Bile	Prevent inflamm-ation due to prick of thorn or bam-boo strips	The bile of the fish is applied when pricked by a thorn, it becomes easy to remove.
8.	*Puntius* sp. (fermented)	*Manthu*	Whole fish	Blood purifier for pregnant women as well as child.	*Manthu* is cooked with bamboo shoot and taken.
				Fever and com-mon cold, speci-fically to pregnant women.	Manthu is cooked with chilli and taken to cure common cold.
9.	*Anguilla bengalensis*	*Nujung*	Fats	Rheumoid-arthritis	The fat is used as a ointment.
10.	*Heteropnuestes fossilis*	*Singki*	Brain	Sting by the fish itself	The brain of the fish is used as an antidote.
					The brain is consumed raw when stung by the fish itself.
11.	*Wallago atu*	*Seketa*	Head	To maintain health of the liver	Boiled head of the fish is taken regularly.
12.	*Labeo pangusia*	*Notun*	Flesh of the fish	Cure weakness after delivery	Boiled fish is taken regularly.
			Bile	Stomach ache	Bile of the fish is taken orally.
13.	*Channa punctatus*	*Ok-meklot*/*ok-borok*		Eyes	Develop the eyesight of the baby, through pregnancy.The affected parts used to be smeared with the eyes of the fish with common salt.

Source: Field study 2015-2017

Table 14: Local names of herbs or plants listed and used by the Karbis

Name of the plant	*Part of the plant or herbused*	*Type of ailment*	*Medicinal use*
Pipali (Piper longum)	Roots	Cough	The root is crushed and the pulp is extracted which is then given to the affected person.
Mirve (Averrhoea carambola)	Leaves	Skin disorder	A paste prepared out of the leaves of *Mirve*, mixed with kerosene oil, used to be smeared on the specified areas.
Hanjura	Leaves	Bone fracture	The leaves of *Hanjura* are tied tightly on the affected area that helps in fixing a bone fracture.
Menuchek	Leaves	To reduce skin itching	The leaves are crushed and pounded into a paste and applied on the affected area.
Nusadol	Fruit	Dysentery to reproductive mothers	The pulp of the fruit is extracted and liquified through water. The syrup was prescribed for the concerned women, to cure her ailments.
Thipli (Terminalia chebula)	Leaves	Dysentery to new born babies	The leaves are crushed and liquified through water. The mixture was prescribed to the concerned women to drink.
Chong-a-mok	Leaves	Dysentery to new born babies	Small balls were prepared, which used to be an admixture of crushed leaves, tiny pieces of garlic and water.
Thermit Kecham	Roots	Dysentery to reproductive mothers	The roots were added with water and honey. It was suggested for the concerned women, to drink.
Vothung Mekbop	Leaves	To stop vomiting of the pregnant women and others	The leaves were crushed and made into a paste with water. A small quantity of salt was added to the mixture.
Amlokhi (Emblica officinalia)	Fruit	To stop vomiting of the pregnant women and others	The fruit was offered to the affected person to stop vomiting.
Tenesi	Bark	To stop blood dysentery during pregnancy and other time	The bark was cut into small pieces and soaked in lukewarm water. The mixture was given to the affected person.
Nok, tortey (Amaranthus bicolor)	Fruit, pulp	Prevent jaundice of the pregnant women and new born child	The pulp of *nok* was mixed with the juice of *tortey* which is given to the affected person to drink.
Pherklum	Leaves	Reduce high blood pressure during pregnancy	The leaves of *pherklum* were boiled with water to prepare a mixture.
Abela tengsa	Leaves	Kidney stone	The leaves were crushed with water and the mixture was given to the affected person to drink.
Henru-ki-ik	Leaves	To stop excessive bleeding during menst-ruation and pregnancy	To heal up the wounds and to prevent bleeding, a paste was prepared and used to be applied.
Thekek (Stevia rebaudina)	Leaves	Toothache	The leaves of *Thekek* are crushed and pounded with some water and applied.
Baap Keso	Leaves	Pain in joints	The leaves used to get mixed with mustard oil and a paste was prepared. It used to be smeared on the affected areas.
Mircharne	Bark	Prevent diabetes specifically in pregnancy	The bark is soaked in water and the mixture obtained is given to the affected person to drink.
Brahmii (Bacopa monnieri)	Leaves	Prevent asthma	The leaves used to be dried up in steam water. Afterwards, it gets separated through sieve. Any affected person used to consume the extracted water.
Ghuikumari	Leaves	Prevent fever, cold and cough	A paste was prepared with the dried-up leaves. The paste used to get smeared on the forehead of the concerned persons.
Araa (Rauvolfia Sepentina)	Leaves	Prevent fever, cold and cough	A mixture used to get prepared with dried leaves, straw, mustard oil, garlic. Then it was burnt and the collected ashes, used to get mixed with few

Table 14: Contd...

Name of the plant	*Part of the plant or herb used*	*Type of ailment*	*Medicinal use*
			grain of rice. Collectively it was applied on the forehead of the affected person.
Sonarii (Cafia Nedosa)	Leaves	Do	The leaves used to get dried up, crushed and moisted with mustard oil. The paste was then smeared over the forehead.
Bohera (Terminalia bellirica)	Leaves	Cough	An admixture, used to get prepared with the ginger, honey. The pulp was to be consumed by the affected person.
Bimuu and amara (Emblica officinalis)	Leaves	Prevent indigestion, stomach ache during pregnancy	The leaves were pounded and boiled with water. The extract was given to the concerned women, to redress their complications.
Bethera	Bark	Prevent indigestion, stomach ache during pregnancy	A juice was being prepared with boiled water, pieces of barks, added with pepper.
Durumphul (Vetiveria zizanioides)	Leaves	Prevent indigestion, stomach ache during pregnancy	At first, the boiled leaves were separated through sieve. Then those were crushed to form the paste.
Batmor	Leaves	Dysentery to reproductive mothers	The leaves used to be crushed and then the bitter juice was added with sugar. This admixture was prescribed to the affected person.
Omoora	Roots	Dysentery to reproductive mothers	The roots were pestle to prepare the juice. It was then mixed with few guava leaves and prescribed to be consumed by the affected mothers.
Chiratah (Sivertia Chirayita Bhedelilota)	Leaves	Dysentery to new born babies	The leaves were used and added with honey. Then, it used to be provided to the concerned babies.
Bhedililota	Leaves	Dysentery to new born babies	The leaves were first dried up in steamed water. Then, the extract was added with the fish curry and consumed by the concerned babies.
Khuramani and phepheringkam	Bulb	Cure infertility	The bulb used to be squashed into paste and added with drops of honey before consumption.
Nilokut	Seeds	Cure infertility	At first, tiny pieces were prepared from the seeds and dried up in steamy water for about three hours. Then, it was pasted by mixing with water and applied to the concerned persons.
Bankopath, kharmola, Ageasi		Bark and leaves	Skin boils The leaves of *Bankopath*, and *kharmola* used to get mixed with the bark of Ageasi. Collectively it used to get pasted. Further, the paste was applied on the affected body parts, frequently at a certain period of time.
Katphul	Leaves	Red rashes to the reproductive women and new born babies	The leaves of *katphul* were mixed with the leaves of watermelon and burnt collectively. The ash used to be mixed with coconut oil and paste was applied on the affected body parts.
Birbu	Leaves	Skin boil with pus inside	At first, with its leaves and beehive, a mixture was prepared and burnt. Then the ashes were mixed with coconut oil. It was applied on the affected areas until the pus came out.
Bhagordut, Dutgba	Flowers	A kind of diarrhoea affecting infants	A mixture was prepared with the flowers and boiling water and given to the patients at a regular interval.
Odor	Bark	Skin allergy to the reproductive mothers and new born child	In the lukewarm water, the barks were added. The affected persons were suggested to take bath with that water only.

Table 14: Contd...

Name of the plant	*Part of the plant or herbused*	*Type of ailment*	*Medicinal use*
Enamarika, odor	Latex and bark	Fracture	The latex of *Enamarika* was applied to cure the fracture. The traditional healer used to set the broken bones manually, along with the pasting of the latex. Then it was tied up very tightly with the *odor.* The entire course used to take around 15 days.
Neem (Azaridr achta indica)	Leaves	Prevent chicken pox to the pregnant women and new born babies	The leaves were pasted and added with water, to prepare the juice. Afterwards, a few drops of honey were added then, used to be consumed.
Onion *(allium cipa)*	Roots	Insect bite	A paste used to be prepared with the crushed roots and was applied to the injured body parts.
Manmoti, rupeswaad	Leaves and fruit	Prevent jaundice to the pregnant women and new born babies	Both of their leaves were crushed together and then the paste was to be eaten with roasted crabs.
Tortey	Fruit	Prevent jaundice to the pregnant women and new born babies	The juice of *tortey* is extracted and mixed withwater or sugarcane (*lolung*)

Source: Field Study 2015-2017

was observed that Karbi women were in a better state of health than other tribal women as stated in some previously conducted studies. Among the studied Karbi families, the traditional food habit had sustained the appropriate birth weight of their infants (Table 15). It is their ethno-ecological and age-old indigenous practices, which had sustained a comparatively safe and secured reproductive mother-child health care system.

Table 15: Relationship between food inclusions and exclusions during pregnancy and pregnancy outcome

District	*Number of pregnant women surveyed followed recommended food taboos*	*Pregnancy outcome-Infant weight at birth (Normal 2.5 kg)*	*Under weight (<2.5 kg)*
Karbi Anglong	72	72 (100.00)	NIL

Source: Field study 2015-2017 and record of local PHC and Civil hospitals

6. Pregnancy Related Taboos

The Karbis used to follow certain crucial restrictions during pregnancy period. The funeral ground was the most commonly tabooed place during pregnancy among the Karbi pregnant women. Also, houses of a deceased person, forest, deserted places, roaming outside alone after the dusk was also to be strictly avoided by an expectant mother. The reason associated with avoidance of those places were mainly fear of ghosts, evil spirits, etc., which might harm the unborn child and the pregnant women.

Besides debarring certain movements, a number of acts were also prohibited for a pregnant woman and her husband. Those primarily include the killing of any living thing. Particularly the killing of a snake was forbidden for the couple. Killing of a snake was feared to result in a silt in the child's tongue and eventually his tendency to lick and show the tongue all the time. Touching and carrying a corpse was also another taboo for a pregnant mother and her husband in the studied population. There were also beliefs about the effects of the conduct and the behaviour of a pregnant woman on her unborn child, such as she cannot tell lies. If she used to do it, her children would feared to be liars. An expectant mother could not steal anything, else the child would also be thief. She should not show any disrespect to elders. Such behaviour of an expectant mother used to cause difficulty in childbirth.

7. Rituals Related to Pregnancy and Childbirth

The Karbis believed that their supreme deity *Hemphu* was responsible for impregnating and

that was God's wish whether a couple should have children or not. However, if a woman did not have any children then they generally performed a ritual to propitiate the deity *Somme,* to cure the barrenness even within a year. The offering to *Somme* was generally made in the *jhum* fields or in the jungles. A goat, a pig or fowls are offered to the deity. If after one year, there was no symptom of conception, then the ritual was supposed to be repeated again.

The Karbis hold rituals to relieve expectant mothers of pre-natal pain and to ensure easy delivery. Eggs were extensively used in these rituals.

The Karbis generally used to perform three ceremonies at the time of pregnancy. The first one was usually performed before 6 months of pregnancy, known as *Hee-i-phuri*. This was mainly performed to protect the expecting mother from any evil spirit. The second rite was known as *Hemphu-anoor,* performed at the time of delivery. Another rite called as *Oti Rongpang* was also performed at the time of delivery. Along with that they used to perform a special ritual called *Nari Kata Suwa* during the pregnancy period for the safety and protection of the expectant mother.

This was a kind of purification ritual whereby the ritual impurity of the childbirth extends to the mother, the newborn and also the delivery room. It was preceded by the *Daini puja* performed for the welfare of the newborn by warding off the evil eye from harming the newborn. The ritual used to start with the installation of the image of *Daini* in the delivery room. Spells were chanted and she was requested to thwart off evil on befalling upon the newborn baby. At the same time a black bird, which was believed to possess mystic powers against evil, was sacrificed as offering to the *Daini*. This was followed by the *Nari Kata Suwa* ceremony observed in the same delivery room. The paraphernalia included the laying of a banana leaf in one corner of the room whereupon powdered rice and a lighted earthen lamp was duly placed, the traditional priest *Kurusar*, used to break an egg over this offering while chanting spells to remove the chuwa (period of pollution) from the room, that is, the mother and the baby.

8. Role of Ethno-gynaecologists

The Karbi women had a deep psychological faith on their local ethnogynaecologist, related to their pregnancy and child birth. They believed that they could effectively discuss their gynaecological problems with the ethno-gynaecologists without any apprehension and shyness because of the fact that she was one among them who can never be wrong. In contrary, with respect to the doctors of the Primary Health Centre, majority of them were males and used to treat many patients a day. The Karbi women of the studied villages believed that the doctors of the Primary Health Centre hardly have time. Another firm belief held by Karbi women of the studied villages was that the doctors and the staff of the Primary Health Centre caused anxiety among the women because they advised them on so many aspects of pregnancy that it almost appeared to them as a disease. Karbi women of the all studied families believed that pregnancy was a 'normal process' in the life of a woman.

In the studied families, midwifery was devoid of any clan specification. After acquiring adequate skill, a woman could professionally take up the midwifery. Ethno-gynaecologists used to have a dignified social prestige and honour in the traditional Karbi society. They used to have adequate knowledge related to gynaecological problems and its solutions. They used to have adequate knowledge of locally available floral and faunal resources, different parts of different herbs in relation to the ailment of the concerned people. She used to play certain significant roles in different stages related to pregnancy and childbirth, as mentioned below.

i. Prenatal Care: In the studied families, an ethno-gynaecologist was usually selected between the sixth to the ninth month of pregnancy. During this period, the ethno-gynaecologist used to visit the pregnant woman weekly. In order to make child birth smooth and easier, the most common pre-natal practice of the ethno-gynaecologist was abdominal massage. They used to take a little amount of warm mustard or coconut oil on their palm and applied the massage on the abdomen in the rhythmic slow circular movement. During the ninth month of pregnancy, coconut water was given to the concerned women, for the maintenance of homeostatic balance.

ii. Delivery: An ethno-gynaecologist arranges the delivery of the child in a separate part of the house. This place was usually the inner room of the house, but not at any place, which was

near to the objects of religious usage. The ethno-gynaecologist ensures that the place selected for the delivery is cleaned properly, as the mother and the new born are highly susceptible to various illnesses. The place must not be over crowded. Apart from a few elderly relatives, she advises neighbours and friends to wait in the other room. The most popular position for delivery in the all studied families was sitting with knees bent, leaning back on someone or something for support. Other traditional positions include kneeling, squatting, and standing up. The attendants who assisted the pregnant women were usually the mother, mother in-law, and elder sister or sister in-law of the woman. The attendants were asked to hold the feet and hands of the pregnant woman. The ethno-gynaecologist then exerts pressure with each labour pain and lubricates the vaginal canal with coconut oil. The major duties of an ethno-gynaecologist during the process of delivery were to provide physical and mental support to the woman and to massage her abdomen (especially during contractions) and sometimes her back, legs and thighs. It was believed that massaging eases the birth process. Before and after conducting the delivery, the ethno-gynaecologist washes her hands with soap or detergent whatever is available. Delivery among the Karbis of studied villages is known as *oso mahang thek.*

iii. Removal of The Placenta and The Umbilical Cord: The people of the studied area locally termed the placenta as *phul*. It used to be taken out without any ardous manual labour. Regarding the smooth expulsion of placenta, standing, stretching and uterine massage were regularly applied by them. After the removal of the umbilical cord, it was tied with a thread or a string. Meanwhile, the umbilical cord or *chete ari*, was used to get cut, with a split of a sharp bamboo, known as *siju*. Afterwards, it used to get buried outside the dwelling house but definitely within the courtyard. Only after the baby breaths normally, the umbilical cord was cut by them. The cord used to be adequately wrapped with a cotton or linen cloth and kept inside the house. As the baby cried, it was dipped in a bowl of water and feed the infant. Then it was buried.

iv. Post-Delivery: After delivery, the new born was held upside down and then sprinkled with water to make it cry. Then the baby was sponged thoroughly with lukewarm water. Immediately after the birth, the ethno-gynaecologist put a black spot on the forehead of the new born to ward off the evil eye. Thereafter, the baby was shown to relatives and friends. After the third day, a few drops of mustard oil was smeared on the body of the baby and massaged gently by the ethno-gynaecologist. For the next few days, the ethno-gynaecologists clapped the hands or beats small objects near the ears of the new born to observe its responses. They advised the mother not to take the baby outdoors, as new-borns were extremely susceptible to infections. The ethno-gynaecologists used to educate the newly became mother on how to hold the baby's head after birth. She regularly used to visit the house of the woman to massage her and to advice her on the diet to be followed. Newly delivered mothers used to follow the advice of the ethno-gynaecologists and accordingly avoid chillies and other spices, as it used to affect the breast milk.

The issues can be understood more in detail through the following case studies

Case Study 1: Phunu Timungpi, a 75-year-old female was an ethno-gynaecologist since 25 years and she was the oldest in this work among the studied villages. Till date she dealt with around 175-200 pregnancy and delivery cases. She used to claim to have an in-depth knowledge about the locally available herbal floral and faunal resources to cure the female from different gynaecological problems. As an ethno-gynaecologist, she had multifarious roles to play. Her presence used to be the prime psychological support, for the reproductive mothers, related to their child birth. She believed that midwifery was a female centric social responsibility. However, they had never thought about any profit motive, because a child is the messenger of their deity only. Whatever the couple used to give her happily, she was satisfied with it only. Phunu stated that, ethno-gynaecology was a continuous learning process and could be learnt from a senior midwife only. After she dealt her first case successfully, she bacame much well known about her authority over the skill as an ethno-gynaecologist even in neighbourhood villages. However, she learnt about the medicinal values of the local herbs from her mother.

Case Study 2: Jotsna Tokbipi was a 40-year-old female inhabiting in one of the studied villages of Bokajan. When she was of 35 years when

suddenly menopause occurred to her. She became very frightened with it, to get socially ashamed. At first she went to Diphu civil hospital, but the male doctor, who was from a different ethnic group, was hardly able to communicate with Jotsna due to a different mother tongue. Her treatment remained incomplete and the problem persisted as it is. Then, she went to the ethno-gynaecologist for the treatment. The said healer, told her to remember, whether she had broken the taboo of food during menstruation or pregnancy at any point of time. She admitted the fact that, unknowingly and unintentionally she once did it. The said healer advised her to consult with the magico-religious healer at first to appease the benevolence. Accordingly, Jyotsna did it and after the said rituals she went to the ethno-gynaecologist for the appropriate treatment. She gave Jyotsna indigenous medicine for a month and gradually her problem was redressed.

Case Study 3: Jayanti Ingtipi, a 26-year-old female of Bokajan, narrated her experiences the experience of her first child birth Sarkathim. During the period of study his son was of two years old. Kadami Rongpipi an ethno-gynaecologist of the village, looked after her entire delivery process. As it was her first experience of pregnancy, so she was advised by the ethnogynaecologist, to keep abstain from certain food like jackfruit, black gram, to avoid any additional warmth in the womb. Concerned ethnogynaecologist believed that overweight might create suffocation to the womb and its death. She was advised to keep abstain for heavy weight lifting and arduous household work. Elder sister of Jayanti assisted with Kadami for her succesful child birth. Both of them psychologically supported her in the entire process. Their collective afforts resulted a normal child birth with appropriate birth weight.

Case Study 5: Klirdap Kropi, a 30-year-old woman of Nilip, narrated that the ethno-gynaecologists were not simply a midwife. Their strong emotional and psychological support, during the period of child birth, is unparallel. Such emotional attachments, often used to become permanent in life and even after several years also, they were being called for suggestion. Neera had two children, she stated that during the period of her first delivery, she was immensely weak and always felt drowsy. Ethno-gynaecologist Phunu Timungpi, used to look after her regularly and advised her about the diet and nutrition. She diagnosed that Neera was anaemic, by observing her symptoms. She regularly gave her appropriate indigenous medicines. Both of her deliveries were safe and the health of the babies were also proper.

As a result, during the period of study from January 2015 to December 2017, it was recorded that, total 72 women became pregnant and had given birth to their children safely. No cases of maternal mortality had been recorded during the period of study. Further, among the total studied families, none of the cases of maternal mortality have also been recorded. Further, during the period of study from January 2015 to December 2017, a total 105 numbers of childbirth cases were recorded. Among them no cases of child mortality were found. Any case of foetal loss, stillbirth and under-5 mortality was not recorded as well.

Again, the record was taken from the period of January 2013 to December 2017 and a total 235 cases of birth were recorded from the studied families. Among them only 1 case of U5 mortality was recorded, due to malaria.

Thus, among the studied Karbi people, covering collective sample population from every block of the entire district, it has been found that, the cases of maternal mortality rate, infant mortality ratio and under 5 mortality ratio is remarkably lesser than the national level, state level and even within the district level data. It has been reported by the doctors of Diphu civil hospital and PHCs that in the district of Karbi Anglong, the cases of infant mortality, neo natal mortality and U5 mortality was quite high among the caste Hindus of both Bengali and non-Bengali communities and Muslims. But in case of the tribal communities, particularly among the Karbis, the issues of reproductive mother child health were intimately associated with their cultural practices. Even the literate couples that were located close to the urban vicinity and even converted to Christianity were also dependent a lot on their traditional healers and ethno-gynaecologist.

The studies of Bhattacharjee (2015) revealed that the livelihood of the Karbis were closely related to their surrounding nature and natural resources. In this concern, the present study has found in detail that such practices were immensely helpful for a successful reproductive mother-child health care system. Their traditional knowledge of ethno-medicine and ethnic diets had a deep-rooted ethno-ecological perspective.

CONCLUSION

The reproductive mother-child health issues of the Karbis cannot be understood in isolation. It is intimately related with their surrounding ecological background, natural resources, indigenous knowledge, folk belief, rituals and psychological dependence primarily. Their folk belief and indigenous knowledge used to play a very crucial role in the preparation of different ethnic diets for the menstruating and pregnant women. On the other hand, they used to cure gynaecological and reproductive complications through their traditional medicines as prepared through the locally available floral and faunal resources. Karbi women were very much psychologically dependent on their traditional healers as well as ethno-gynaecologists due to their similar cultural background. It has been found that, among the studied Karbi population, the traditional method of treatment and ethnic diet related to reproductive mother-child health issues, had been successful to prevent the cases of maternal mortality, infant mortality, foetal loss and U5 mortality. If their method is being followed by the other non-tribal ethnic groups of the studied villages and adjacent villages, then it is expected to be effective in reducing the reproductive mother-child health related mortalities, at least to a certain extent.

RECOMMENDATIONS

In rural areas due to remote location and economic crisis, many indigenous groups are still struggling for a secured pregnancy period and safe childbirth. However, their age-old indigenous knowledge and ethno-medicinal practices are often being ignored or get a very little attention. As found in the present study, if such issues are well documented then it may be a pathway to find out an alternative source of medicine, for the marginal poor people throughout the nation. Meanwhile, in case of Karbi Anglong, the local natural and forest resources are required to be protected and preserved seriously, for the continuation of such a secured health care system.

ACKNOWLEDGEMENTS

The author is highly acknowledging the Indian Council of Medical Research (ICMR) and ICSSR- NEW DELHI IMPRESS, for the kind financial support in this major research project. The author is extremely grateful to the people of the studied areas for their kind cooperation. Also, cordial regards to the much-respected teacher Professor Vinay Kumar Srivastava Sir (Honorable Director, Anthropological Survey of India) and Professor Buddhadeb Chaudhuri Sir, for their kind academic guidance to the author always.

REFERENCES

Bhattacharjee S 2015. Significance of natural resources in material culture: A study on the Karbis of Karbi Anglong, Assam. *Humankind*, 11: 117-143.

Bhattacharjee S 2015. Sacred groves in Karbi Anglong: An anthropological observation. *The Eastern Anthropologist*, 68(1): 131-141.

Bhattacharjee S 2015. Indigenous knowledge of health care system among the Karbi Tribal group of Assam. *Tribal Health Bulletin*, 22(1 and 2): 23-32.

Bhattacharya M 2016. Ethno religious medicinal plants of the Chothe of Manipur, North East India. *Tribal Health Bulletin*, 23(1): 37-42.

Chaudhuri B 2003. *Health, Forest and Development- The Tribal Situation*. New Delhi: Inter India Publications.

Gogoi G, Ahmed FU 2007. Effect of maternal nutritional status on the birth weight among women of tea tribe in Dibrugarh district. *Indian Journal of Community Nutrition*, 32(2): 120-122.

Mahanta LB, Roy TD 2012. Nutritional status and the impact of socioeconomic factors on pregnant women in Kamrup district of Assam. *Ecology of food and Nutrition*, 51: 463-480.

Mandelbaum DG 1970. *Society in India.* Berkeley: University of California Press.

Morgan LM 1990. The medicalization of anthropology: A critical perspectiveon the critical-clinical debate. *Social Science and Medicine*, 30: 945-950.

Srivastava VK 2020. Anatomy of stigma: Understanding COVID-19. *Social Change*, 50(3): 385-398.

Paper received for publication in March, 2020
Paper accepted for publication in January, 2021