

SR-12

**AN EXPLORATORY STUDY OF FOOD FADS,
FALLACIES AND MYTH DURING PREGNANCY
AND LACTATION AMONG THE TRIBAL AND
NON -TRIBAL POPULATION
OF
KAMRUP DISTRICT OF ASSAM**



A REPORT



**National Institute of Public Cooperation and Child Development
Regional Centre, Guwahati**

SR-12

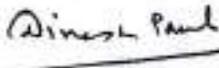
Message

Proper nutrition and adequate health care is essential during the period of pregnancy and lactation for the health of the mother as well as the child. From ancient period several food beliefs about what must be taken or what must be avoided during pregnancy continue to prevail in the societies of modern age due to ignorance, superstition or otherwise. These food fads, fallacies and myth about food are often influenced by certain cultural norms and also socio-economic status of the family. These age-old beliefs need to be reviewed to see their relevance or otherwise in contemporary context.

To have better understanding of the existing food beliefs, NIPCCD Regional Centre Guwahati conducted an exploratory study on food fads, fallacies and myth during pregnancy and lactation among tribal and non-tribal populations of Kamrup district of Assam. The findings of the study, I am sure would help the researchers, planners and faculties of different training and educational institutions to incorporate such components as considered useful, in their training and teaching programmes to eventually improve the nutritional and health status of women and children. I believe, the findings will also help Social Welfare Department of Government of Assam to promote better food habits among different communities.

I would like to extend my thanks to Dr (Mrs) B. Bhuyan, Regional Director, Guwahati and Ms. Ritu Geu Goswami, Assistant Director and the project team for the successfully conducting the study.

Date: 06.04.2015



(Dr Dinesh Paul)
Director

FOREWORD

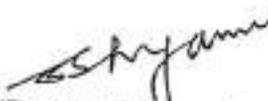
Pregnancy and lactation are two important phases in a woman's life. There are numerous beliefs and customs across the world which govern these two phases. In India too such beliefs are found to be widely followed from time immemorial. Though, a few of these beliefs and customs have some credibility, majority are neither logical nor beneficial. Of all these beliefs and customs, a large number are associated with food. There are several studies which point out to the link between malnutrition in pregnant mothers, nursing mothers, new born babies and infants with food restriction or avoidance due to fads and fallacies.

Assam is a state with diverse population belonging to different ethnic, religious, and linguistic groups. The present study was carried out in seven blocks of Kamrup district of Assam to have an adequate understanding about the practices of food fad and fallacies. The study covered 300 pregnant and nursing mothers drawn from Anganwadi areas, PHCs, CHCs from these seven blocks and also from four - two government and two private hospitals in Guwahati.

It is hoped that the findings of the study will be immensely useful to the officials of Social welfare and Health department of government of Assam in general and to those working in these blocks in particular. Besides, the report should also be of great value to the NGOs, social activists working on health and related issues in the district of Kamrup. The findings will definitely help them in developing a pragmatic work plan for the people in these areas.

I take this opportunity to thank all the CDPOs, Supervisors and Anganwadi Workers of the ICDS projects; ANMs, LHVs, Medical Officers of PHCs and CHCs and Superintendents of the hospitals for their invaluable support in the data collection work. I also thank all the respondents who shared their views and opinions with the research team. Lastly, I appreciate the sincere effort put up by Miss Ritu Geu Goswami, Assistant Director of this Centre and her Research team with Miss Swarnali Talukdar, Mrs. Pomima Duwarah, Mrs. Kongkana Kumari Kakoty to make the study a successful one.

February 24, 2015


(Bandana Bhuyan)
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EXECUTIVE SUMMARY

BACKGROUND

Pregnancy and lactation are stages in a women's life which calls for care and attention in terms of food, rest and health care. Pregnancy is the period when the foetus grows inside the woman's body and lactation on the other hand, is the period following pregnancy when the women nourishes a fully developed and rapidly growing baby with breast milk. The nutritional requirement during both the periods is more to support the growing foetus as well as the mother herself. Poor maternal nutrition during pregnancy usually results in low birth weight and high neo-natal and infant mortality, as well as maternal mortality and continuation of the inter-generational cycle of malnutrition. Unfortunately, in India, this phase is associated with numerous myths and misconceptions. There are many misbeliefs, food fad and fallacies in our society which are unscientific but hard to convince as these fallacies and myth are followed from time immemorial. Traditionally, a pregnant as well as the lactating mother's diet has been governed by elaborate beliefs and myths.

The food fads, fallacies and myth followed during pregnancy and lactation cannot be stated as good or bad until an in-depth study is conducted to reveal the truth. The knowledge of food fads, fallacies and myth followed in our society has to be accepted and analyzed which may in turn help to reduce the mortality, morbidity, low birth weight infants and malnutrition among different communities of Kamrup district. Against this backdrop, it is proposed to explore the food fads, fallacies and myth during pregnancy and lactation among different tribal and non-tribal population of Kamrup district of Assam with the following objectives:

Objectives

- To identify various food fads, fallacies and myths followed during pregnancy and lactation period among different communities of Kamrup district;

- to understand the reason behind the food fad, fallacies and myths;
- to understand if any relationship exists between food fads, fallacies and myths with the people belonging to different socio-cultural and economic groups, and
- to gather information (if any) on the impact of information technology on the food fads, fallacies and myths

Methodology

Selection of blocks

The study was conducted in Kamrup district of Assam. Kamrup district has a total of 15 blocks and out of the total blocks, seven (7) ICDS projects were selected for the study. Out of the seven ICDS projects, four projects comprised of tribal population, two projects comprised of non-tribal population and one project comprised both tribal and non-tribal population. All the blocks selected were away from Guwahati. The tribal blocks included were Boko, Rampur, Rani and Dimoria and non-tribal blocks were Chaygaon and Chayani Bardwar. The block which comprised of both tribal and non-tribal population was Hajo. To get respondents from urban area, Kamrup metro was also selected for the study.

Sample

The universe of this study was the pregnant and lactating women from tribal and non-tribal population of Kamrup district of Assam. From each ICDS projects, five (5) AWCs were selected. From each AWC three (3) Pregnant and three (3) Nursing mothers were drawn. Apart from AWCs, PHCs/CHCs of the tribal and non-tribal blocks were also included in the study to get a diversified

study sample. Seven PHCs/CHCs were selected for the study and from each PHC/CHC three (3) pregnant and three (3) lactating women were selected for the study. As the study also focused to see the dietary habits in pregnancy and lactation, IYCF practices among children, rituals performed during pregnancy and following food fads, fallacies and myths of urban and rural population, data of pregnant and nursing mothers was collected from Govt. /Pvt. Hospitals of Guwahati (i.e. Kamrup metro). In order to get more specific data on pregnancy and lactation, two government and two private hospitals were selected and visited for the study. From the out-patient department of each hospital, six (6) pregnant and six (6) nursing mothers were selected and data was collected interviewing them. Thus, total sample consisted of 300 mothers.

Sampling Procedure

Multi-stage Random sampling method was used keeping in mind the rural/urban population, educational status, religion and income level. The primary data was collected from individual pregnant and lactating mothers by interviewing them. Some data was collected from the AWCs, PHCs/ CHCs and hospitals. Focus group discussion was held with the pregnant mothers, lactating mothers, mother-in-laws, CDPOs, Supervisors, AWWs, ANMs and ASHA separately.

Research Tools and Techniques

Different kinds of tools and methods were employed to procure required information from pregnant and lactating women of Kamrup district. The first tool was the interview schedule which was used to collect information from the women (both pregnant and lactating) regarding socio - economic background, physiological state, performance of ritual during pregnancy and lactation, food habits/ myth/ fallacies, foods avoided or included during pregnancy and lactation. The second method used was Focus group discussion which was conducted for mothers (both pregnant and lactating), mother-in-laws, ICDS and Health functionaries on the merits and demerits of following the traditional

food fads, fallacies and myths during pregnancy and lactation. Lead questions were developed before hand for each group to facilitate FGD.

Methods of Data Collection

The information on pregnant and lactating mothers was collected from AWCs. The pregnant and lactating mothers were interviewed in their own homes. The Supervisor and the AWW accompanied the Project team so that a rapport can be made with the family members of the pregnant and lactating women and the respondents feel free to answer the queries. To collect data from hospitals, permission was sought before hand from the Sub Divisional Medical and Health officer and Hospital Superintendent of the selected PHC/CHC and Government/Private hospitals after having a detailed discussion on objectives of the research study and the need for conducting the study. Required number of pregnant and lactating mothers were selected from the out-patient department of the chosen PHCs/CHCs/hospitals. Face-to-face interview was conducted with the pregnant and lactating mothers using interview schedule and all the required information was thus collected. Focus group discussion was held with mothers/mother-in-laws of pregnant and lactating mothers, ICDS functionaries (CDPOs, Supervisors, AWWs) and health functionaries (ANMs and ASHAs). After the FGD, a pamphlet on good dietary practices during pregnancy and lactation was distributed among them and thereafter the contents of the pamphlet were discussed in detail.

Data Processing and Analysis

Before analysis, a code book was prepared for coding the interview schedule. For questions with multiple answers, separate excel and excel sheet tables were prepared and coded separately. Statistical techniques used were averages and percentages. Interpretation was done both by using statistical tools and descriptive illustration.

Presentation of Report

The report is divided into various chapters as shown below keeping in view the sequences:

Chapter I: Introduction and Methodology: This chapter comprises of introduction, review of previous studies, objectives, methodology, etc.

Chapter II: District profile: This chapter describes about Assam and Kamrup district with the tribes such as Bodo, Garo, Kachari, Rabha, Tiwa, Karbi, Tea Tribe and distribution of sample according to tribes.

Chapter III: Socio-economic profile of the respondents: This chapter describes the general background of the respondents such as age, educational background, social status, occupation of the family members, family income, family pattern and religion.

Chapter IV Physiological state of the women and rituals performed: This chapter illustrates the celebrations and rituals associated with pregnancy and lactation or childbirth which are called by different names depending on the community of both tribes and non tribes.

Chapter V Food fads, fallacies and myth followed during pregnancy and lactation: This chapter describes the food fads, fallacies, myth, dietary restriction and consumption of special food followed during pregnancy and lactation.

Chapter VI Care of the new born: This chapter deals with initiation of breast milk, exclusive breast feeding and complementary feeding.

Chapter VII: Impact of information technology on following the food fads, fallacies and myth during pregnancy and lactation: This chapter describes the traditional beliefs, sources of food fads and reasons of following and not following such foods during pregnancy and lactation.

Chapter VIII: Outcomes of focus group discussion are presented in this chapter

Chapter IX: Conclusion: This chapter depicts concise of the study.

Chapter X: Recommendations: Recommendations of the study are presented in this chapter.

As mentioned above, seven ICDS projects of Kamrup districts of Assam were visited for collecting the data. A brief description of the findings are given below:

FINDINGS

In the present study, both the tribal and non-tribal population were covered. The total population for the whole of the study was 300. Among the total population, 150 were pregnant mothers and 150 were lactating mothers. Out of that 150 pregnant mothers, 62 per cent were non-tribes and 38 per cent were tribes. The sample size of lactating mothers was 150 and out of that 58 per cent was non-tribal and 42 per cent were tribal. The tribes comprised of Garo, Karbi, Tea Tribe, Boro, Rabha, Tiwa and Kachari.

Socio-economic profile of the respondents

Age: Majority (40 %) of the pregnant and lactating mothers belonged to the age group of 23 to 27 years and 18 to 22 years followed by 12.33 per cent in the age group of 28 to 32 years respectively. The percentages of mothers in the age group of 33 to 37 years were 5.67 per cent. Very few (1.67%) of pregnant and lactating mothers belonged to below 18 years of age. It was felt that there is an urgent need of awareness programme on family planning and appropriate age to attain pregnancy so that the health of the mothers is secured well.

Education: Among the pregnant and lactating mothers, only 9.33 per cent were illiterate and three per cent were just literate. The highest qualification observed was Phd which was very less i.e. 0.33 per cent followed by post graduate (1.67%). Majority (41 %) of the respondents studied up to class X

followed by Intermediate (12.3%), matriculate (10.6%), up to class VII (9%) and up to class V (6%). The mothers who studied up to primary level were 4.33 per cent and graduate were only 2.33 per cent.

Social status: Of the total population, 23.67 per cent belonged to SC category, 36 per cent were ST and only 3.33 per cent belonged to tea tribe. Among general and OBC, general category of population were more (80.67%) than OBC (6.33%).

Occupation: The occupation of the husband of the pregnant and lactating mothers were daily wage worker (29.67%) followed by business (26.67%). Agriculture and company job each were 15.33 per cent, government job were 8.33 per cent and very few (4.66%) major occupation was artisan.

Family Pattern: Majority (67%) of the study population adapted to joint family pattern followed by nuclear family (33%).

Family income: Most (49.67%) of the families had a monthly income of Rs. 5000 to Rs. 15000. The families who had an income of less than Rs 5000 were 38.33 per cent and very less (12%) population had a monthly income of above Rs. 15000.

Religion: Maximum (80%) of the study population followed Hinduism followed by Muslim (8%). Very few (4%) families of pregnant women followed Christianity.

Physiological state of the women and rituals performed

Rituals are performed during pregnancy and lactation to ensure good health of the mother and the growing child. In Assam due to wide variations in caste and tribes, there are many terms used to describe the rituals such as *panchamrit*, *jeura*, *pak khuwa*, *sat mohiya* etc. These rituals are upheld by

mothers, mother-in-laws, grandmothers and other elderly people in the family and are followed till today very religiously.

Period of pregnancy:

Maximum (56%) of the pregnant women taken for the study were in the third trimester of pregnancy followed by 35.33 per cent in second trimester. Very less (8.67%) belonged to the first trimester. Of the total 150 pregnant mothers, 58 per cent observe rituals and 42 per cent did not observe any kind of rituals during pregnancy period. Among 42 per cent of respondents who do not follow any kind of ritual mentioned that as there are no elderly members in their families, there is no one to tell them about the ritual and also they do not have knowledge of following any such kind of rituals during pregnancy. It was mostly observed in nuclear families and in those marriages in which family concern was not there. Among 58 per cent of pregnant mothers who observe rituals, 78.16 per cent were non-tribals and 21.84 per cent were tribals. Ritual performance during pregnancy was not very common among tribals compared to non-tribals. Tribals performed some rituals like *panchamrit*, *jeura* and *sat khuwa* as influenced by non-tribals.

It was observed that performance of pregnancy ritual was more (73.56%) among up to matriculate pregnant mothers than the illiterate (8.05%) and above matriculate (18.39%) respondents. The ritual performance among pregnant mothers in the income group of Rs 5000 to Rs 15000 was found to be highest (49.42%) than the rest income groups.

Performance of rituals

Panchamrit is a sacred mixture of five ingredients i.e. milk, curd, honey, sugar and ghee in equal amounts given during five months of pregnancy and it is believed that it acts as an energy booster for both and baby and the mother. Data reveals that 42.53 per cent both tribal and non-tribal pregnant mothers consumed *panchamrit*. *Jeura*, mostly celebrated between seven to nine months of pregnancy among non tribal respondents of Assamese and Muslim

community and also among some tribals such as Rabha, Boro, Urang, Tea tribes. The main items for the ritual are rice kheer, sweets, fruits and Assamese delicacies as *laru* (specially made from jaggery and rice flour) and different kinds of *pitha* (rice cake). *Jeura* was reported to be celebrated by 12.64 per cent of tribal and non-tribal pregnant mothers.

Sat khuwa is celebrated in seventh month of pregnancy and it was seen to be observed only among tribals as well as non-tribals. Among non-tribals the ritual was observed among Muslim population. As the ritual is only celebrated in seventh month, seven types the food items are included such as fruits, sweets and traditional Assamese snack items as *laru* and different kinds of *pithas*. Altogether, 18.39 per cent of the pregnant women celebrated *sat khuwa*. *Phal pakkar* which is celebrated in fifth month of pregnancy is not so common in Assamese non-tribal population. The food items included were five types of fruits and sweets. Only one (1.15%) respondent from AWC mentioned about the ritual. *Sat posotia* was observed among muslim population in seventh month of pregnancy. Only 1.15 per cent of the population as a whole mentioned about the ritual. Different kinds of fruits, vegetables and milk were given to the pregnant women to eat as the elderly felt that in the third trimester of pregnancy all food items such as fruits, vegetables, milk and milk products are good for the health of the mother.

Simantan was celebrated among non-tribes of Bengali and Tamil population in seventh and ninth month of pregnancy. The food items included were seven types of fruits and sweets, rice kheer, rice flakes, curd, dal and non-vegetarian food. The ritual was observed by 4.59 per cent of respondents. *Pak khuwa* is celebrated among muslims in fifth month of pregnancy. Only 1.15 per cent respondents followed the ritual in which milk, coconut and Assamese *pitha* (rice cake) is given to the pregnant mother to eat.

The ritual named *Sadavokham* is followed in seventh month of pregnancy among non-tribal Assamese population. Only 1.15 per cent of the respondent observed the ritual in which non-vegetarian items are given to the pregnant

women to eat. *Gopini* is the ritual which takes place in the ninth month of pregnancy. It is also called *gopini naam* as elderly women who are called *gopini* in Assamese sing religious song (*naam* in Assamese) with some traditional instruments. At the end of the ritual, the pregnant women are blessed by all *gopini* for safe delivery. It is observed in non-tribal Assamese population. Data reveals that 2.29 per cent of respondents followed the tradition.

Godh bharai is celebrated among Bengali and Bihari population of Assam. *Godh bharai* is a baby shower celebrated during seventh and ninth months of pregnancy to welcome the unborn baby to the family and bless the mother-to-be with abundant joys of motherhood. In Hindi, *godh bharai* literally means to 'fill the lap' with abundance. Among the total population, 2.29 per cent of pregnant mothers observed the ritual.

Purpose of following the ritual during first pregnancy

Among the total population of 87 pregnant women who followed rituals during pregnancy, 85.05 per cent responded that the ritual is performed as a tradition with no reason behind. The mothers who followed the ritual for health of the baby were 11.49 per cent and 3.45 per cent of mothers mentioned that the ritual was followed for safe delivery. Although ritual is followed as tradition it helps the mother to feel special as the pregnant mother gets the attention and care. Psychologically also the mother feels happy which in-turn is good for the baby. Moreover, the food items which are included in following the rituals like fruits, vegetables, non-vegetarian items and milk and milk products are required for proper growth and development of the foetus as well as the mother.

Performance of ritual in subsequent pregnancies

It is noteworthy here that, rituals are by and large observed only during first pregnancy. Only a small number of mothers (22.9 %) stated that in subsequent pregnancy also rituals were performed.

Period of lactation

Maximum (32%) of lactating mothers were in the four to six months of lactating phase followed by 30 per cent of respondents till three months of lactation. The lactating women who were in seven to nine months of lactation phase were 20.67 per cent and 17.33 per cent belonged to 10 to 12 months of lactation.

Rituals performed after delivery

After delivery of the baby, rituals were performed by 82 per cent of lactating mothers. Less than one fourth (18%) of the lactating women mentioned that they do not follow any kind of ritual after delivery. The performance of rituals just after delivery among tribal's and non-tribal were 40.38 per cent and 45.07 per cent respectively. Rituals after delivery are performed to celebrate the coming of the new born and the mother safely to home.

It was observed that up to matriculate lactating mothers performed rituals more (72.35%) than above matriculate (16.27%) and illiterate (11.38%) mothers. Ritual performance among monthly income level of Rs 5000 to Rs 15000 was more (52.03%) than less than Rs 5000 (35.77%) and above Rs 15000 (12.19) lactating mothers. So, it may be stated that neither educational qualification nor income level is the deciduous factor in performance of rituals after delivery. Rituals are performed as tradition and for health of the mother and the child.

Reasons for following the ritual

Maximum (39.83%) mentioned that they celebrate the coming of the new born as it is a joyous occasion for them. Less than one-fourth (19.51%) followed the ritual for health of the child. Small proportion (10.57%) each of the respondents followed the ritual for health of the mother and child as well as a tradition. Almost 8.14 per cent each of the lactating mothers mentioned that they follow the ritual after delivery for health of the mother and also as name

giving ceremony of the child. Very few (3.25%) followed the ritual to increase milk production of the lactating women. A combination of six ingredients especially i.e. papaya, colocasia, potato, brinjal, gourds, radish is fed to the lactating mothers on the sixth day of delivery especially by elderly people with the belief that milk production will be enhanced. As a whole, 18 per cent mentioned that they do not follow any kind of ritual.

Food fads, fallacies and myth followed during pregnancy and lactation

During pregnancy, it was seen that among all the food categories some items are restricted with the belief that it is harmful to the baby. Among the total population of 150 pregnant mothers, 31.33 per cent avoided non-vegetarian foods and 68.67 per cent did not avoid non-vegetarian foods during pregnancy period. Different kinds of vegetables ranging from green leafy, seasonal to sour vegetables were restricted by 78 per cent of pregnant mothers. Maximum (39.32 %) of the respondents avoided papaya from conception till delivery for fear of abortion. Seasonal vegetables such as carrot, cucumber, ladies finger, pumpkin, squash and gourd were restricted by 18.8 per cent of pregnant women for fear of nausea. These seasonal vegetables are mentioned as slippery and cold food, which, if taken, the body will swell during pregnancy and the baby will have rough skin. All sour food items are restricted by 15.38 per cent of respondents up to delivery for fear of miscarriage and bleeding. The respondents felt that if they take sour food item more, they will suffer from anaemia. Banana flower was avoided by 10.25 per cent of pregnant women from three months of conception till delivery for the feeling that the size of the placenta will be like the plaintain (very big) and may be the cause of abortion. Bottle gourd and white gourd were avoided by 9.48 per cent up to delivery for fear of cough and cold as they consider it as cold food. Colocasia was avoided by 2.56 per cent of the respondents from five months till delivery for stomach irritation. Amaranthus and bitter vegetables, each were restricted by 1.71 per cent of respondents for feeling of nausea and headache respectively.

Amaranthus was avoided up to delivery and bitter vegetable was restricted from three months to delivery.

Maximum (82.05%) of the respondents restricted sour fruits like mango, tamarind, pineapple, berry from conception to delivery for fear of miscarriage. These are believed to cause dilution to blood. Other fruits like banana, jackfruit and coconut were avoided by 17.94 per cent of the respondents from two months till delivery for fear of miscarriage, religious belief.

It was found that among the respondents majority (91.33%) of pregnant women have no dietary restriction on cereals and pulses being the staple food. Chilli and spices were avoided by 18.67 per cent in their meal due to the fear of stomach irritation, jaundice, gastricitities, vomiting and for the feeling that it may impure their blood. Salt and sesame were restricted each by two per cent respondents from conception to delivery for fear of high blood pressure and nausea respectively.

The other foods avoided were alkali (*khar*) which is a common add on to a majority of the people of Assam was restricted by 19.33 per cent of pregnant women for fear of miscarriage, and also they believe big sized baby with dull brain will be born. Cow's colostrum (*Phehu*) were restricted by two per cent of selected pregnant women as a traditional custom. They also believed it to be bad for their health and for fear of miscarriage

Consumption of food during pregnancy

Data reveals that maximum number of (31.33%) selected pregnant women consumed food as usually during the period of pregnancy. The percentage of pregnant women who consumed food more than their intake was 20 per cent. These 20 per cent pregnant mothers felt that during pregnancy they should eat for herself as well as for the growing foetus. The elderly advised them to eat for two people. Fourteen per cent of pregnant mothers consumed food sometimes more when they feel either very hungry or they do not have the feeling of nausea and the remaining 22.67 per cent of the respondents consumed food whenever they felt hungry. The pregnant women who took food

less than usual normal intake was found to be 12 per cent and they mentioned that due to nausea they could not eat proper quantity of food during the first trimester of pregnancy.

Special food/dish included in diet

Special food during pregnancy was consumed by 80 per cent of women whereas remaining 20 per cent of respondents had not included any special food in their diet. Among tribal and non-tribal respondents it was found that 80.64 per cent of non-tribal and 78.94 per cent of tribal included special foods during pregnancy. The special foods mentioned by the pregnant mothers and which were included during pregnancy period were green leafy vegetables, fruits/dry fruits, non-vegetarian foods and milk and milk products. The pregnant mothers who have higher qualification included special foods more as they were aware that the requirement for protein, iron, vitamins and minerals increases during pregnancy period. Inclusion of special foods in the income level of less than Rs 5000/month was less than the above Rs 5000/month. With rise in income level the people could afford to buy the special foods.

Consumption of homemade rice beer

Homemade rice beer is consumed sometimes by 11 (7.33%) of pregnant women followed by 3 (2%) as occasional drinkers. Very few (0.67%) included rice beer everyday whereas 90 per cent of respondents did not consume rice beer throughout the period of pregnancy. It was also found that the respondents who consumed rice beer were all tribals and mostly from Boro, Rabha and Karbi community.

All tribal women have the habit of smoking. It is happy to note that the result of this study showed that apart from the habit of smoking none of the tribal pregnant women smoked during their entire pregnancy period.

Consumption of food during lactation

The survey result gives a scenario that 45.33 per cent lactating mothers consumed more food during the lactation period; whereas 25.33 per cent follow their usual and 23.33 per cent ate whenever they felt hungry. Six per cent of the selected respondents could not have food in proper amount which is less than usual normal intake due to their less appetite. Respondents also mentioned that their food consumption usually depend on their economic conditions.

Special food included in diet during lactation period

It was observed that 84 per cent of the selected sample of lactating women included special food in their daily diet; whereas remaining 16 per cent of them did not consume any special food in their diet during the lactation period. Among tribal and non-tribal respondents similar responses (84.37 per cent and 83.72 per cent) were received regarding inclusion of special food during lactation period. Education wise it was observed that the above matriculate respondents included special foods more (91.67 %) than below matriculate (85.32 %) and illiterate (64.7 %) lactating mothers. Likewise, the respondents from income level of below Rs 5000/month included special foods less than the above Rs 5000/month income group.

Special foods included during lactating period in the studied population:

Soisristi is eaten mostly by Bengali community on the sixth day of the birth of a child as the elderly people feel that it will increase milk production in the lactating mothers. It is a combination of six ingredients especially i.e. papaya, colocasia, potato, brinjal, gourds, radish which is prepared as a vegetable and no spices are added. It was observed that 16 (15.23%) of the respondents from Bengali community consumed this item. As the item is prepared with six vegetables and given to the lactating mother on the sixth day after delivery the special food as well as the ritual is termed as Soisristi. *Jhaal* is a special food which is given to the lactating mothers after fifth day of the

birth of the baby. In some communities, this preparation is given upto 15 days to get relief from body pain. The *Jhaal* is prepared by mixing ingredients such as white gourd, local herbs like shunk vine (*Paederia foetida*), asiatic pennywort (*Centella asiatica*), curry leaves, etc. The important ingredient is the spices as black pepper with ginger and garlic. Some people also add eggs or dry fish to this preparation.

Special chutney is prepared with onion seeds and garlic which is made to fine paste and given to the lactating mothers after delivery. The reasons for including this chutney were to get rid from the body pain of the women after delivery and also for milk production. The chutney was taken by eight (5.33 %) of the lactating mothers. Plantain flower is prepared as vegetable and included in lactating mother's diet. Respondents feel that plantain flower is iron rich and it will help to dry the womb and reduce overflow of milk production. Of the total 150 respondents, 13 (8.67%) mentioned of including plantain flower in their diet after delivery.

Local fish especially small variety is prepared with herbs as asiatic pennywort (*Centella asiatica*), shunk vine (*Paederia foetida*), curry leaves, etc. with black pepper and given to the lactating mothers for relief from body pain and energy. It was found that of the total 150 respondents, 95 (63.33%) included local fish with herbs after delivery. Local herbs without fish was mentioned by 32 (21.33%) of lactating mothers. They prefer local herbs as chutney, vegetable or curry. A typical variety of fish known as fresh water eel (*Amphipnous cuchia*) is preferred by 20 (13.33%) of the respondents as they felt that inclusion of this fish will increase the level of haemoglobin in blood.

Dietary restriction followed during lactation

Sour fruits like tamarind or any type of sour items were avoided by 74.73 per cent of selected respondents upto the six months of delivery for not to get any infection in internal wounds of mother and also the fear that baby may get dysentery; whereas among the selected respondents, banana, coconut, and

some other fruits like pineapple also were not consumed by them during the lactation period as these are considered to be cold food and the baby may get cold and cough. Remaining 39.34 per cent were not having any fruits restriction. Among tribals and non-tribals restriction of fruits were observed more (96.55 %) among non-tribals than tribals (11.11%).

Non vegetarian food such as fish, meat and egg were restricted by lactating mothers upto six month or one year after the birth of baby. Fish (fresh/dry) was restricted by 41.78 per cent due to the fear of that the baby will get stomach irritation or loose motion, meat was not consumed by 36.71 per cent of selected mothers as it is considered as hot food and they believed it may give stomach irritation and small pimples on the skin of the baby. Egg was also avoided by 21.52 per cent during the period of three to seven months of baby because of elder's advice and some others reasons like it may cause jaundice, stomach irritation to the baby and it is also considered as hot food. The remaining 48 per cent of respondents have no dietary restriction of non-vegetarian foods. Non-tribals restricted non-vegetarian foods more (67.82%) than the tribals (31.74%).

Among vegetables, gourds were restricted by 18 per cent as they feel it is a cold food and if they take it the baby may suffer from cough and cold. Brinjal and colocasia bulb were restricted by 30 per cent and 14.67 per cent of the respondents respectively these are slimy food and may cause harm to the child. Pumpkin was avoided by 22 per cent women as it is a hot food. Green leafy vegetables like drumstick leave, pumpkin leave, amaranthus, etc. are avoided as the respondents feel that new born baby will have greenish loose stools and stomach upset.

Pulses like black gram, lentil and kesari dal were avoided by 28.67 per cent. Black gram was avoided being a cold food and it may cause cough and cold of the baby, lentil and keshari dal was avoided as hot food and for the fear that mother's milk will dry off. Spices and oil was avoided by 41.33 per cent for fear of stomach irritation and gastracities and curd was avoided by 9.33 per cent of the respondents being a cold food and the baby might get cough and

cold. *Khar* (traditional alkali) was restricted by 11.33 per cent of lactating mothers for fear that mother's milk may secrete the alkali in milk and this alkali may make the child less intelligent. Some mothers who had caesarian delivery avoided the alkali for fear that the womb may not dry.

Inclusion of special item in diet for enhancement of milk production:

Food items like colocasia, papaya, black pepper, sesame, etc were consumed as special food which is given to the mothers if the mothers are not able to feed breast milk. Some mothers feel that their milk production is less. In such cases the elders consider that giving special foods will help the mothers to increase milk production. Two varieties of colocasia leaves and stem known as *dohi koshu* and *knoll koshu* are given as boil with dal or prepared with spices and taken by 23.33 per cent the lactating mothers. Similarly, raw papaya was consumed by 29.33 per cent of lactating mothers as it increases milk production. Black pepper was added to most of the dishes like vegetables, curries, etc which was taken by 13.33 per cent of lactating mothers. Chicken soup which is prepared with spices like ginger, garlic and pepper powder was given to 16 per cent of lactating women as the elderly people feel that it increases milk production. Small chick or local variety of chicken is used for the preparation of soup. Among tribal and non-tribal lactating mothers 87.36 per cent of non-tribal and only 14.28 per cent of tribal lactating mothers included special food in their diet.

Care of the new born

After the baby is born the baby has to get oxygen from his lungs and during this transition period the baby needs support to breath smoothly. After neonatal resuscitation, the next important aspect is care for the new born and early initiation of breast milk. Initiation of breast milk should be done immediately after birth or at least within one hour of delivery.

Time of initiation of breast feeding

It is heartening to note that 36.67 per cent of babies were initiated breast feeding immediately after birth and 30.67 per cent initiated within one hour of birth. One-fourth (24.67%) nursing mothers initiated breast milk after one hour on the first day of delivery. Very few nursing mothers initiated breast milk after second day. Early and timely initiation of breast milk was observed more among tribal nursing mothers than non-tribal mothers.

Pre-lacteal food

Maximum (62%) of lactating mothers did not introduce pre-lacteal food. Remaining 38 per cent introduced one or the other pre-lacteal food like animal milk, woodward gripe water, homemade rice flour mix, water dissolved with sugar cubes (talmisiri), *panchamrit*, sugar and basil leaf (tulsi) soaked water. Among tribal and non-tribal nursing mothers, 77.77 per cent of tribal mothers and 50.5 per cent of non-tribal mothers did not introduce pre-lacteals before breast feeding.

Exclusive breast feeding

Data reveals that 84.84 per cent of the mothers fed breast milk exclusively for six months. A similar percentage of 79.59 per cent and 77.27 per cent of tribal and non-tribal nursing mother's breast fed their children exclusively for six months.

Introduction of complementary food

More than half (66.67%) of the nursing mothers introduced complementary foods on completion of six months and 11.33 per cent introduced before six months. Less than one-fourth (22%) nursing mothers introduced complementary food after seventh month onwards. the percentage of tribal nursing mothers who introduced complementary food at the right time were more (71.42%) than the non-tribal nursing mothers (63.21).

Continuation of breast feeding along with complementary food

From the data, it is seen that majority (83.33%) of the mothers continued breast feeding up to two years and beyond, 12.67 per cent up to two years and only 4 per cent continued till one year.

Sources of food fads, fallacies and myths during pregnancy

Majority (89.62%) of the pregnant mothers main source of food fads, fallacies and myth were the family members followed by 8.89 per cent who were the neighbours and village people. Only few (1.48%) got the information from television. Among tribal and non-tribal groups, family members were the common source of disseminating information on food fads and myths. The response to the question of willingness of the pregnant mothers to follow the food fads and fallacies was that among the total 135 pregnant mothers who followed foods fads and fallacies during pregnancy 85.92 per cent wanted to follow and 15.55 per cent do not want to follow. Among tribals and non-tribals, the willingness to follow the food fads and fallacies were observed more among non-tribals than tribals.

Sources of food fads, fallacies and myths during lactation

Majority (94.4%) of the lactating mothers mentioned that the sources of food fads, fallacies and myths during lactation were the family members and second source of information which is 5.6 per cent only were from health personals. Highest (85.33%) of lactating mothers showed their willingness to follow the fallacies during lactation and 14.67 per cent did not want to follow. Among all the respondents who did not follow the food fads during lactation period, 86.36 per cent lactating mothers feels that the food fads and fallacies are unscientific and remaining 13.64 per cent could not resist the temptation for sour foods and so did not follow the food fads and fallacies.

Belief of hot and cold foods during pregnancy and lactation

The hot and cold food concept is a traditional belief in choosing foods which is still prevalent with a large majority of the population who are illiterate or ignorant regarding the nutritive value of foods. Meat, eggs, legumes, nuts and oilseeds are considered to be "hot" foods and are believed to produce heat and cause boils in the body. Reversely, cold foods are believed to lower the heat production and lead to the development of cold, sore throat, etc. Fruits, vegetables and milk are thought to be cold foods. Of the total population, 68 per cent mentioned that have the belief regarding hot and cold foods and 32 per cent did not have any belief. Among tribal and non-tribal groups, the perception regarding hot and cold foods during pregnancy was observed more in tribal than the non-tribal pregnant mothers.

The perception of hot and cold foods is also followed during lactating period. Of the total population, 89.33 per cent mentioned that have belief regarding hot and cold foods and 10.67 per cent did not have any belief. The perception regarding hot and cold foods among tribal (87.71%) and non-tribal (90.32%) lactating mothers were found almost similar.

Craze for pica

Pica is a common practice among pregnant mothers of eating non-food items like mud, clay, chalk, etc. Data reveals that, maximum (81.33%) of the pregnant mothers did not have the craze for pica and only 18.67 crazed for non-food items as mud vessels, mud lamp, pottaries, fishing net corks, charcoal and raw mud. The craze for pica was 21.5 per cent among non-tribal than tribal i.e. 14 per cent.

Focus Group Discussion

FGD was held among pregnant and lactating mothers, mother-in-laws and among ICDS and health functionaries to know the food items which specially (other than the normal food items) included and excluded during pregnancy and lactating period. The pregnant mothers mentioned that special

food which is taken by pregnant women during pregnancy other than the normal food items were fruits, dry fruits, fish (raw & dry), egg, meat and milk. The pregnant and lactating mothers felt that inclusion of these foods will give them the strength for delivery and the baby will grow properly. The lactating mothers reported special food (Jhaal) is given to them after fifth day of the birth of the baby which is prepared by mixing ingredients such as white gourd, local herbs like shunk vine (*Paederia foetida*), asiatic pennywort (*Centella asiatica*), curry leaves, etc. the important ingredient is the spices as black pepper with ginger and garlic. Black cumin seeds (Kaljeera) Chutney prepared with black cumin seeds and garlic and given to lactating mothers to get rid from the body pain after delivery and also for milk production. The foods which were avoided are pineapple and tamarind (for fear of miscarriage), papaya (for fear of abortion), cold water (for fear of fever) and alkali (for fear that proper brain development of foetus will not take place).

The foods which were avoided during lactating period were sour food believing that it will affect the healing of internal wounds of mother after delivery. Chilli, oily and spicy food were avoided for fear of stomach upset and duck meat and pumpkin were avoided as hot food and may upset the stomach. The pregnant mothers mentioned inclusion of papaya, pineapple and sour foods may lead to miscarriage. Ghee and fenugreek leaf were included as believed to be good for brain development of the foetus.

The respondents felt that the food restrictions or additions are helpful to them and they believe it to be true. The respondents mentioned that these are advised by elderly persons and the advice it for the better health of the mother as well as the child. They also felt that the elderly people have more knowledge and experience and the pregnant and lactating women oblige to their restrictions and rituals. Some pregnant mothers mentioned that if they cannot resist their temptations especially towards sour foods, they have it in small amounts without the knowledge of their mother-in-laws.

The mothers and mother-in-law gave special food items like fruits, herbs like asiatic pennywort (*Centella asiatica*), stinging cat fish (singi) local variety to their daughter/daughter-in-laws during the pregnancy period to include in their diet for healthy pregnancy. A ritual is performed by the mother side of the pregnant lady at fifth months of pregnancy which is called panchamrit i.e. the combination food items of ghee, honey, milk, curd and sugar were given to the pregnant women to avoid pregnancy complications and to get a healthy baby. Dry fish with black pepper and garlic which is also called sukoti is given after delivery to the mother to get relief from body pain. Sesame Chutney is given up to five days after delivery for milk production. Variety of colocasia (*Dohi kosu/Knol kosu*) with black pepper and garlic chutney is given from five days to 15 days to the lactating mother for milk production and to get relief from body pain. Local chicken is prepared with black pepper and garlic and given to the lactating mothers to get relief from body ache after delivery. Another special food called *Pasoti* (roasted garlic with boil food) is given to lactating mothers to get relief from body pain.

The mothers and mother-in-law usually tell their daughter-in-law to avoid pineapple, papaya, alkali (*khar*), sour foods during pregnancy as they think it will lead to miscarriage. During lactation, sour foods are avoided up to one month of delivery as they feel it will help to heal the womb. Sour foods, cold foods, slippery foods are avoided by the lactating mother if the baby is suffering from cold and cough.

The mother-in-law believes that their daughter-in-laws follow these restrictions as it is helpful for the mother as well as the child. They still belief these rituals as the mother-in-laws mentioned that they also followed these restrictions when they were pregnant and feel that for following these restrictions their children were healthy and they were able to deliver four to five children in normal delivery method.

The ICDS and health functionaries feel that the people follow these additions and restriction as it is their tradition. They also mentioned the rituals

followed during pregnancy as panchamrit, jeura, jhaal, etc. The functionaries felt that certain foods like pineapple, tamarind, alkali (*khar*) if taken in excess amount may lead to some complications like miscarriage. The AWWs mentioned that they counsel the pregnant and lactating mothers about proper dietary care. They also mentioned that they convince the mothers to include fruits, non-vegetarian foods and sprouted legumes, etc. in their regular diet.

After the focus group discussion, a pamphlet was distributed to all pregnant and lactating mothers, mothers/mother-in-laws, health and ICDS functionaries containing information on good dietary practices during pregnancy and lactation. A detail discussion was held on the pamphlet so that behavioural change and improvement in dietary practices can be sustained in the targeted families.

CONCLUSION

A woman is most vulnerable as she has to pass through important phases of life such as adolescence, pregnancy and lactation. During these phases, attention is required in terms of food and medical care. Adequate and nutritious food helps to retain the health of a woman as well as the child after delivery. Improper food intake during pregnancy may lead to low birth weight infant, infant mortality, maternal mortality and malnutrition. In our societies, there are many cultural norms and practices which are followed during pregnancy and lactation period. The practice of including and excluding some type of foods during pregnancy and lactation is followed from ancestral times and it is deep rooted in the societies. However, with the coming of the new generation mothers, it was seen that they followed as their elderly person's advice them. The new mothers do not want to contradict with the family. The traditional beliefs are followed with only one intension that the pregnancy will be successful and will have a healthy reproductive outcome. These beliefs may or may not conform to the modern biomedical notions about the proper types and amount of food needed by pregnant women to safeguard maternal nutrition, adequate growth of foetus and safe delivery. Many studies have

shown that the food taken by a large section of pregnant women in India is deficient in caloric content, protein and other nutrient-a leading cause of maternal and child mortality. The study on food fads, fallacies and myth during pregnancy and lactation also attempted to find out the traditional beliefs and practices followed in Kamrup district of Assam.

RECOMMENDATION

From the findings of the study, the following can be recommended:-

- 1) The inclusion of special foods like milk, meat, fish, egg, fruits, etc during pregnancy and lactation period should be encouraged for the well being of the mother as well as the child.
- 2) The traditional rituals observed during pregnancy like *panchamrit*, *jeura*, *sat khuwa*, *phal pakkar*, *sat posotia*, *simantan*, *godh bhara*i, etc. were found to be very good as it was observed that in all rituals nutritious foods were included. Similarly, special foods such as *soisristi*, *jhaal*, chutney of onion seeds, fish with herbs, etc. which were provided after delivery were also found to be good. These special foods included were mostly herbs and spices which had healing properties.
- 3) The Health and ICDS functionaries should give special emphasis to educate and counsel the pregnant and lactating mother's about balanced diet and also to avoid food fads.
- 4) The performance of rituals is encouraging but the food items provided in the rituals should be incorporated on a regular basis rather than a ritualistic way.
- 5) Early initiation of breast feeding was satisfactory but introduction of complementary foods was somewhat disappointing. However, the IYCF (Infant and Young Child Feeding) practices of early initiation, introduction of complementary food was found more among tribals than non-tribals. The ICDS functionaries as well as Health functionaries such as ANM, ASHA, etc. should emphasize to counsel pregnant and lactating

mothers to improve the status of IYCF practices. This will help to reduce the incidences of undernutrition among children.

- 6) The habit of smoking was present among tribals but it is happy to note that none of the tribal pregnant and lactating mother smoked during entire period of pregnancy and lactation. Such obstinence is encouraging.
- 7) Awareness generation activities are strongly recommended to remove the unhealthy practices like introduction of pre-lacteal feed, eating of non-food items during pregnancy.
- 8) Proper supervision and monitoring of the service delivery at AWCs under ICDS should be strengthened so that good dietary practices remains among the pregnant and lactating mothers.

CHAPTER I

Introduction

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Pregnancy and lactation are two very important phrases in women's life. Pregnancy is the period when the foetus grows inside the woman's body and lactation on the other hand, is the period following pregnancy when the woman nourishes a fully developed and rapidly growing baby with breast milk. During pregnancy, the nutritional requirements of women increase to support optimum foetal growth and development as well as to prepare her for lactation and the stresses of childbearing. Poor maternal nutrition during pregnancy usually results in low birth weight and high neo-natal and infant mortality, as well as maternal mortality and continuation of the inter-generational cycle of malnutrition. Unfortunately, in India, this phase is associated with numerous myths and misconceptions. There are many misbeliefs, food fad and fallacies in our society which are unscientific but hard to convince as these fallacies and myth are followed from time immemorial. For example, in North India it is believed that if saffron is taken with milk and food items which are white in colour as coconut, egg, etc. will make the child fairer. Likewise, the people of Assam and Bengal believe that if pregnant women take lots of green leafy vegetables the baby will have excessive hair growth. There are many such dietary prescriptions which are rooted in the social fabric of a community. Traditionally, a pregnant woman's diet has been governed by elaborate beliefs and myths.

A pregnant woman's diet should be balanced with the advancement of her pregnancy. During pregnancy, proper nutrition is very important. Eating well and getting the right exercise are absolutely essential for the health and well being of baby as well as the mother. Maternal nutrition is a top priority during pregnancy. Due to nausea and loss of appetite during the early months of pregnancy, the food intake is generally reduced. Further, additional nutrients are required for the growth of foetus. Expectant mothers need dietary extras in the form of calories, protein, carbohydrates,

fat, vitamins, and minerals. Eating a wide variety of foods is the best way to get the proper nutrients for the mother and the unborn child.

During lactation the increased nutritional requirements are also very important due to the milk secreted by mother for feeding the baby. A nursing mother, in addition to normal diet require more proteins, whole grain cereals, pulses/dals, milk, curd, green leafy vegetables and fruits. However, in our society it is often felt that after the birth of the child the mother does not receive much attention in terms of nutrition. If a nursing mother does not consume required amount of food, her own body stores will be used for production of milk, thus affecting her health.

In the context of deep-seated social biases against women, the pregnancy does not receive desired attention or importance in terms of nutritional and health care. Similarly, after the birth of the child the mother does not receive adequate diet. In many societies, dietary restriction is strictly followed for nursing mothers. A large number of food items are considered harmful and therefore, are avoided. Water intake is restricted as it is believed that the womb and the uterus will not dry quickly if water is drunk liberally. After all, conditions like anaemia and malnutrition, which ultimately have a direct impact on the health of the newborn and the mother, are the result of wrong beliefs, food fads and fallacies. But, without going into the depth of dietary habits of the society we cannot say that all food fads, fallacies and myths are unscientific. So, much emphasis has to be given to know the nutritional care during pregnancy and nursing which is most important for the growth of the foetus and nourishment of the mother.

The Rationale and Purpose of the Study

For centuries, in India as well as in other countries, many food items are credited with good or bad qualities which affect our health. Though many of these beliefs have some credibility, many have adverse effect on health. So, it is important to know about food faddism, fad diet and myths in each society. Food faddism and fad diet originally referred to a false belief about the effect of a particular food, poor food choices, uncontrollable craze, food fantasy, food fetish, food hype, etc., and have no scientific basis. Each

community, whether tribal or non-tribal, has many food fallacies and myths and the community follows them convincingly. It is not easy to overcome their beliefs and myths about certain food stuff. Moreover, in a region like Assam, which has more than 18 numbers of tribes and non-tribes, it is very difficult to know all the food fallacies and myths. The population of Assam is 31.11 million according to 2011 census and among the total state's population, 1, 517, 202 are from Kamrup district (Census, 2011). There are total 15 numbers of blocks in Kamrup district covering the rural and urban areas. The Kamrup district is the home of largest number of tribes and non-tribes with varied traditions, cultures, dresses and food habits. Adhivasi, Ahom, Boro, Bengali, Assamese, Bihari, Chutia, Deuri, Garo, Kachari, Karbi, Kalita, Koch-Rajbanshi, Koibarta, Marowari, Matak, Mishimi Mishing, Moran, Nath, Nepali, Rabha, Kachari, and Tiwa are living in the district following their own traditions, beliefs and customs and exhibits variety in traditional food fallacies and myths. Most communities have their own food habits and beliefs that are so unique that other communities find them hard to believe.

Keeping the concentration of major tribes and non-tribes in Kamrup district, an effort on our part is made to know all the food fads, fallacies and beliefs in the society so that strong scientific explanation can be given if these food fallacies are unscientific. But sometimes, there may be some good or scientific facts which can be accepted and analyzed. The knowledge of food fads, fallacies and myth followed in our society can help to reduce the mortality, morbidity, low birth weight infants and malnutrition among different communities of Kamrup district.

Against this backdrop, it is proposed to explore the food fads, fallacies and myth during pregnancy and lactation among different tribal and non-tribal population of Kamrup district of Assam.

Objectives

- To identify various food fads, fallacies and myths followed during pregnancy and lactation period among different communities of Kamrup district;

- to understand the reason behind the food fad, fallacies and myths;
- to understand if any relationship exists between food fads, fallacies and myths with the people belonging to different socio-cultural and economic groups, and
- to gather information (if any) on the impact of information technology on the food fads, fallacies and myths

Review of Literatures

A study conducted by Chandrani Weerasinghe *et. al.* (1982) among Sinhala women in Sri Lanka on Food beliefs and practices showed that during pregnancy, papaya and pineapple are avoided due to fear of uterine bleeding resulting in abortion and also avoid sesame seeds and oil as they are considered as hot foods and are poorly digestible. After delivery, mothers are given a vegetarian diet for the first few days. Meat and fish are believed to endanger the health of the baby, causing skin eruptions, diarrhea and fits. Eggs may be avoided for several days after delivery as they are believed to cause flatulence, indigestion and diarrhea and make the milk indigestible to the baby. Milk is avoided for its coldness. The major foods avoided during pregnancy are fruits like papaya, jackfruit, mango, apple and pineapple. Tubers are avoided because they cause flatulence and could be responsible for fits, cramp, diarrhea and constipation in infants.

Kar, R.K. (1993) did a study among the Nocte women in Arunachal Pradesh which showed that an expectant Nocte mother should not take the meat of eel (gnapo), tortoise (Khokhap), and crab (chan) etc. They believe that she may suffer from severe pain during the time of delivery and also not allowed to take kham (home brewed liquor) because it may cause miscarriage. They further believe that if expectant mother takes egg, the baby shows a delayed lisp. Meat of a deer carrying a baby is also not taken. The foods that are believed to be hot are avoided. Solid foods, oil and spices are avoided which are considered to be indigestible immediately after delivery. Over-boiled rice, dried arum leaf and dried bamboo shoots etc., boiled in water, are prescribed items to the mother of newborn baby for consumption for a few days. Over-boiled rice can be easily digested and is

also believed to increase the production of breast milk. Kham is allowed in small quantities for relief of pain.

Nag, M. (1994) conducted a study in Gujrat among the Bhil tribes to find out the beliefs and practices about food during pregnancy and found that in first trimester some foods which are believed to be 'hot' such as sesame seeds, papaya, eggplant, dried fish, onion, garlic, chillies, jiggery, most of pulses, dates, fenugreek, egg, meat, spices are avoided. Again, in the third trimester some foods are avoided as they are believed to be 'cold'.

Ms. Indu Capoor and CHETNA Team (2000) made a study in India on Dietary Myths and Food Taboos restricting Women's Food Intake and came across with belief that people had regarding food during pregnancy and lactation. Some of which are if the mother eats more food during pregnancy the child gets crushed in the womb. The pregnant woman would pass green stools if she eats green leafy vegetables. Eating peanuts makes the placenta rot and the child gets a white layer on her/his body. Consumption of banana and ghee causes the baby to stick in the uterus. Curd, butter-milk, lemon and citrus fruits lead to Oedema and Arthritis. Non-vegetarian food is hot. Pregnant women should not eat pulses as they cause gastric trouble.

Tamrakar, M. and Shakya, M. (2002) conducted a study in Nepal on food and health practices. The study revealed that during pregnancy sour and hot things, fatty food, garlic, honey, white pumpkin, bengal gram, meat are avoided as it is believed that these foods cause illness, miscarriage, stomach burn. Eating meat is considered sinful due to slaughter of the animals. Pumpkin, green vegetables and colocasia are avoided during the lactation period perceiving that these foods cause diarrhea to the children and affect the health of the mothers.

A study conducted by Monika, S. *et. al.* (2003) among rural women of Kangra District, Himachal Pradesh reported that certain foods preferred/avoided during lactation. A galactagogue called kharani (made of ingredients i.e. milk, coconut, dry fruits, green gram dal Ghee, sugar and sund) was consumed due to the belief that it minimized body aches and provided energy. Among dals, black gram, kidney beans, black eyed beans were avoided due to the belief that these food items produced worms in

infants and produced gas in the child's stomach. Vegetables like potato, cauliflower, radish were avoided due to the belief of their being difficult to digest. Other vegetables like spinach, brinjal and pumpkin were avoided because of traditional belief. Milk and milk products help in milk production and were preferred by majority of mothers but almost all respondents avoided curd during lactation because it was regarded as cold food. Moong (green gram), black gram and masoor dal and vegetables like turnip and carrot were preferred due to their easy digestibility.

Maria Irene Santos-Torres and Edgar Vásquez-Garibay (2003) conducted a study on Food Taboos among Nursing Mothers of Mexico. The study demonstrated half of the mothers avoided one or more food(s) in their diets since childbirth because they were considered to be harmful to the production of milk, to provoke undesirable effects in the infants or both.

A study conducted by Koon et al (2005) on Postpartum Dietary Intakes and Food Taboos among Chinese Women showed that the majority of Chinese women considered most vegetables and fruits "cold" and did not eat them during confinement. The prohibited vegetables were water spinach (*Ipomoea aquatic*), bean sprouts, cucumber, cabbage, watercress, brinjal, chinese cabbage (*Brassica rapa*) and lettuce. Some fruits like watermelon, pineapple, starfruit were reported to be prohibited during confinement. Many respondents consider sea food (including cuttlefish, cockle fish, prawn and crab) and most fish (including kembung, pari, tuna, sardine and bilis) as "poison" and were prohibited from eating these foods.

Sahoo, S. and Panda, B. (2005) conducted a study in Orissa on Dietary Pattern of Expectant Mothers which found that the respondent (28%) observed some sort of food restriction during pregnancy. These restricted food items were spices, chillies, sour items, egg, meat, fish, banana, black berries, onion and mushroom. Coconut and water were also restricted because it may cause cold and cough to the mother and may lead to abortion.

A study by Decker, J. (2005) among Somali community of Somalia on their food behaviors and attitudes showed that during last two months of pregnancy, it is customary in Somalia to reduce food intake, sometimes to

one meal per day in order to prevent a difficult childbirth due to the size of the baby.

A study conducted by Quamra, S.R. *et. al.* (2007) on Bhil Tribes of Madhya Pradesh showed that during pregnancy some foods are restricted. Foods such as fishes, chillies, full liquor, papaya are tabooed socially as these are considered to be hot and may abort the fetus. Amla, dhania are also prohibited as it causes nausea. Twinned fruits and tuber are also prohibited with a belief of having twins. Female respondents mentioned that as the foetus grows the space of the stomach decreases and therefore the pregnant women appetite is lost for food. Soon after delivery, women are preferably given wheat porridge at least for initial seven days. Gur, desi Ghee and coconut are added to make it more energetic. Butter-milk is preferentially given to lactating women as it enhances the flow of breastmilk.

Bandyopadhyay, M. (2009) did a study on lactation and breastfeeding practices in rural West Bengal and found that lactating women amongst certain caste and communities avoided certain kinds of food such as varieties of green leafy vegetables, fibrous vegetables, melons, gourds, pumpkin, papaya, eggplant, shell fish, eggs, certain varieties of fish, lemons, oranges, grapes, chillies, bell peppers, spices, bananas, yoghurt, and oily food, which according to them were harmful for the infant. They avoided these foods with the believe that these foods have laxative properties, considered to be cold, believe to cause skin rash and acidic in nature. During this period mothers are encouraged and allowed to eat lots of garlic, which is believed to enhance the process of drying of the womb (contraction of the uterus).

Mukhopadhyay, S. and Sarkar, A. (2009) conducted a study on Pregnancy-related food habits among women of rural Sikkim. The study reported that certain food items are considered as taboo during the postpartum period only. Upto six weeks, 65.3 per cent of mothers avoided certain categories of food such as milk, eggs, fish, meat, pulses, green vegetables and fruits, which are most perceivably hot and sour foods. Traditionally, local alcoholic beverages are commonly consumed as special foods among women during the postpartum period.

Basu, S. (2010) conducted a study in Bengal which indicates that consumption of papaya by women is believed to lead to abortion. Eggs are thought to cause baldness, sterility and hence not consumed by pregnant women. Milk and fish are not taken on the same day as they believe that this combination is poisonous. Brown shelled eggs are not good for health. Starvation and skipping the meal are good for health.

A study conducted by Patil, R. et al. (2010) among the rural population of Pondicherry regarding taboos and misconceptions about food during pregnancy, concluded that more than 80 per cent people believe that 'hot' food items are avoided during pregnancy as it is thought that it will cause abortion. Papaya is considered to be a fruit which is 'hot'. Similarly 'cold' foods are avoided during lactation as it might affect the quality and quantity of milk production. Most common misconception was consumption of saffron by pregnant woman which results in a fairer skin child.

A study conducted among women in Ghana by Azumah, F. S. (2010) revealed that food like fish, meat, eggs, oily food, banana, coconut, ripe plantain, ladies finger, garden eggs and snail are avoided during pregnancy. Meat and eggs are avoided as this would facilitate having big babies hence cause complications during delivery, which could lead to loss of life of both mother and baby. Coconut causes blindness in the baby. The ripe plantains and banana were believed to cause premature contractions and subsequent miscarriage. Ladies finger and snail were said to cause slime in babies or dripping or watery mouth. Beans provide protein for the women which endangers the physiological development of the baby and it is believed to cause tummy upsets or complications and delays in delivery for women above age 30. Pineapple and coconut are also avoided for fear of miscarriage and abortion. Duck egg is believed to cause asthma in babies. Beef and hilsa fish are thought to dry up the milk of a lactating mother and may also cause diarrhea. A ground up mixture of cumin, chilli, and garlic (a hot food) is commonly eaten in the immediate postpartum period, because it is thought to help heal the birth passage. Women are not allowed to take any food for the first few days after delivery except water.

A study conducted by Tarvinder *et. al.* (2010) in Kurukshetra District, Haryana, India among lactating mothers showed that chapatti was avoided for first four to five days after delivery of baby due to the belief that it is not digestible. Rice, whole pulses, specially kidney bean, bengal gram and black gram were avoided for the first 40 days with the notion that rice being cold food, cause acidity, decreases milk secretion and is not energetic; and whole pulses, being heavy, were gas producing and difficult to digest. Bengal gram was avoided by mothers for three to four months with the belief that it produces gas and causes diarrhea to the infant. Vegetables like cauliflower, green leafy vegetables, potatoes and beans were avoided for one to two months as it was considered to be indigestible and gas producing and also avoided curd and buttermilk for two months with the belief that it causes cough and body pain as well as curdling of milk. Fried foods are not taken as they are believed to be difficult to digest, irritate the throat and cause cough.

Deka, S. (2011) reported that in some tribal areas in Tripura, the pregnant women reduced their food intake because of simple fear of recurrent vomiting and also to ensure that the baby may remain small and the delivery may be easier. The consumption of iron, calcium and vitamins during pregnancy are poor. The habit of taking alcohol during pregnancy has been found to be usual in tribal women of Tripura and almost all of them are observed to continue regular activities including hard labour during advanced pregnancy.

A study conducted by Saikia, S. (2012) on food pattern of tea-tribes of two selected tea-garden, Dibrugarh, Assam, India reported that pregnant women consume seasonal locally available fruits, wild and cultivated green leafy vegetables and other grown vegetables. They prefer bland diet and avoid oily, spicy, hot food and also avoid papaya and pineapple with a belief that it might abort the baby. During lactation they avoid oily, spicy and fried food with the believe that these will cause indigestion for both mother and the baby. They consume lots of indigenous green herbs to increase milk production. During this period masoor dal (lentil) prepared with garlic and

black pepper and lean fish prepared with curry leaves and black pepper are given to the mother with a belief to accelerate free flow of breast milk.

A study conducted by Barenness, *et. al.* (2009) on nutritional consequences of postpartum diet and traditional practices for mothers and children in Vientiane, Lao PDR (bordering Myanmar) found out that none of the mothers reported food restriction during pregnancy. However, during lactation period they only eat natural products and avoid fermented foods and spices. They eat grilled food (except fruits or vegetables) as they believe it prevent cardiac failure and would help to dry the reproductive tract wounds. They do not eat animals with white skin or of white color as this was believed that it may lead to hypotension (low blood pressure). Non exclusive breast-feeding was common and began sooner in children delivered at home than at the hospital.

Methodology

Selection of blocks

The study was conducted in Kamrup district of Assam. Kamrup district has a total of 15 blocks and out of the total blocks, seven (7) ICDS projects were selected for the study. Out of the seven ICDS projects, four projects comprised of tribal population, two projects comprised of non-tribal population and one project comprised both tribal and non-tribal population. All the blocks selected were away from Guwahati. The tribal blocks included were Boko, Rampur, Rani and Dimoria and non-tribal blocks were Chaygaon and Chayani Bardwar. The block which comprised of both tribal and non-tribal population was Hajo. To get respondents from urban area, Kamrup metro was also selected for the study.

Sample

The universe of this study was the pregnant and lactating women from Kamrup district of Assam. As the study carried on to see the food fads, fallacies and myths of both tribal and non-tribal population, care was taken in selection of the study areas. From each ICDS projects, five (5) AWCs were

selected. From each AWC three (3) Pregnant and three (3) Nursing mothers were drawn. Apart from AWCs, PHCs/CHCs of the tribal and non-tribal blocks were also included in the study to get a diversified study sample. Seven PHCs/CHCs were selected for the study and from each PHC/CHC three (3) pregnant and three (3) lactating women were selected for the study.

As the study also focused to see the dietary habits in pregnancy and lactation, IYCF practices among children, rituals performed during pregnancy and following food fads, fallacies and myths of urban and rural population, data of pregnant and nursing mothers was collected from Govt. /Pvt. Hospitals of Guwahati (i.e. Kamrup metro). In order to get more specific data on pregnancy and lactation, two government and two private hospitals were selected and visited for the study. From the out-patient department of each hospital, six (6) pregnant and six (6) nursing mothers were selected and data was collected interviewing them. Thus, total sample consisted of 300 mothers.

Table 1.1

Location of the ICDS projects and villages

State	District	ICDS Projects	AWCs
Assam	Kamrup (metro)	Boko (Tribal)	1.Borpara 2.Aagsia 3.Chakrapani (2 No.) 4.Choudhurypara 5.Parugaon
		Rampur (Tribal)	6.Panikhaiti 7.Pub-Panikhaiti 8.Jarabari 9.Kandulimari 10.Dakhala Boropara
		Rani (Tribal)	11.Garobasti 12.Patgaon 13.Bahupara 14.Jayantipur 15.Sojanpara
		Dimoria (Tribal)	16.Hatimura 17.Pub-Maloibari 18.Kakarmarbong 19.Kurkuria 20.Borkuchi

		Chaygaon (Non-tribal)	21.Bamunigaon 22.Bherbheri 23.Holongjuli 24.Passgumi 25.Kukurmara
		Hajo (Both Tribal & Non-tribal)	26.Helesa (2 No.) 27.Barlah 28.Borochupa 29.Bordodhi 30.Ukhora
		Chayani Barduar (Non-tribal)	31.Narayanpur 32.Sorpara 33.Ganeshpara 34.Parli Natunbasti 35.Dhontola

Total ICDS Projects: Seven (7)

Total AWCs: Thirty five (35)

Table 1.2

Location of the PHC/CHC

State	District	PHC/CHC	Address
Assam	Kamrup	Boko PHC	Dakuapara, Boko
		Rampur PHC	Rampur
		Rani CHC	Azara, Rani
		Sonapur PHC	Dimoria, Sonapur
		Chaygaon CHC	Chaygaon
		Hajo PHC	Hajo
		Chayani Barduar CHC	Mirza

Total PHC: Four (4)

Total CHC: Three (3)

Table 1.3

Location of the Hospitals

State	District	Govt/Pvt Hospitals	Address
Assam	Kamrup (Metro)	Guwahati Medical College and Hospital (Govt)	Bhangagarh, Guwahati
		NF Railway Hospital (Govt)	Maligaon, Guwahati
		Down Town Hospital (Pvt)	Dispur, Guwahati
		Marwari Maternity Hospital (Pvt)	Athgaon, Guwahati

Total Govt. Hospital: Two (2)

Total Pvt. Hospital: Two (2)

Sampling Procedure

Multi-stage Random sampling method was used keeping in mind the rural/urban population, educational status, religion and income level. The primary data was collected from individual pregnant and lactating mothers by interviewing them. Some data was collected from the AWCs, PHCs/ CHCs and hospitals. Focus group discussion was held with the pregnant mothers, lactating mothers, mother-in-laws, CDPOs, Supervisors, AWWs, ANMs and ASHA separately.

Research Tools and Techniques

Different kinds of tools and methods were employed to procure required information from pregnant and lactating women of Kamrup district. The first tool was the interview schedule. The interview schedule was used to collect information from the women (both pregnant and lactating) regarding socio - economic background, physiological state, performance of ritual during pregnancy and lactation, food habits/ myth/ fallacies, foods avoided or included during pregnancy and lactation (Annexure I).

The second method used was Focus group discussion which was conducted for mothers (both pregnant and lactating), mother-in-laws, ICDS and Health functionaries on the merits and demerits of following the traditional food fads, fallacies and myths during pregnancy and lactation. Lead questions were developed before hand for each group to facilitate FGD.

Methods of Data Collection

The information on pregnant and lactating mothers was collected from AWCs. The pregnant and lactating mothers were interviewed in their own homes. The Supervisor and the AWW accompanied the Project team so that a rapport can be made with the family members of the pregnant and lactating women and the respondents feel free to answer the queries.

To collect data from hospitals, permission was sought before hand from the Sub Divisional Medical and Health officer and Hospital Superintendent of the selected PHC/CHC and Government/Private hospitals after having a detailed discussion on objectives of the research study and

the need for conducting the study. Required number of pregnant and lactating mothers were selected from the out-patient department of the chosen PHCs/CHCs/hospitals. Face-to-face interview was conducted with the pregnant and lactating mothers using interview schedule and all the required information was thus collected.

Focus group discussion was held with mothers/mother-in-laws of pregnant and lactating mothers, ICDS functionaries (CDPOs, Supervisors, AWWs) and health functionaries (ANMs and ASHAs). After the FGD, a pamphlet on good dietary practices during pregnancy and lactation was distributed among them and thereafter the contents of the pamphlet were discussed in detail.

Data Processing and Analysis

Before analysis, a code book was prepared for coding the interview schedule. For questions with multiple answers, separate excel and excel sheet tables were prepared and coded separately.

Statistical techniques used were averages and percentages. Interpretation was done both by using statistical tools and descriptive illustration.

CHAPTER II

Profile of the District and their tribes

Field Visit



Face to face interview with the pregnant & lactating mothers



Data collection from remote area

CHAPTER II

Profile of District and their tribes

Assam is a state of India in the north-eastern region. Its capital is in Dispur which is located within the municipal area of Guwahati city. In the south of Assam lie the eastern Himalayas. Assam comprises of the major rivers viz. the mighty Brahmaputra and the Barak river with an area of 30,285 square miles (78,438 km). Assam is surrounded by Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura and Meghalaya. Assam shares its international borders with Bhutan and Bangladesh.

Assam is rich in culture with different ethnic groups, languages, dialects spoken and literature. Assam is known for tea, one-horn rhino, silk and petroleum resources. A land of high rainfall, Assam is endowed with lush greenery which provides the region with a unique hydro-geomorphic and aesthetic environment. From the ancient times, Assam has been a melting pot of various cultural linguistic tribes and races with their distinct rich cultural traditions and practices. Assam is divided into 27 districts. Kamrup is one of the largest districts of the state of Assam with an area of 3,483.77 km.

Kamrup district consists of wide plains through which the mighty river Brahmaputra makes its way flowing a steady course from east to west. The demographic pattern of Kamrup District is a heterogeneous one. However, there exist a perceptible degree of mutual love, respect and inter-religious tolerance amongst them. The district has followers of Hinduism, Islam, Christianity and Buddhism. The ancient temples of Kamakhya and Hajo attracts many pilgrims from all quarters. Major language spoken natively is Kamrupi i.e. Assamese with pockets of Karbi, Garo, Tiwa, Boro, Bengali, etc.

Kamrup District is situated between 25.46 and 26.49 North Latitude and between 90.48 & 91.50 East Longitude. The District is bounded by Udalguri and Baska District in north; Meghalaya in south; Darrang and

Kamrup (Metro) in east and Goalpara and Nalbari district in west (Figure 2.1).

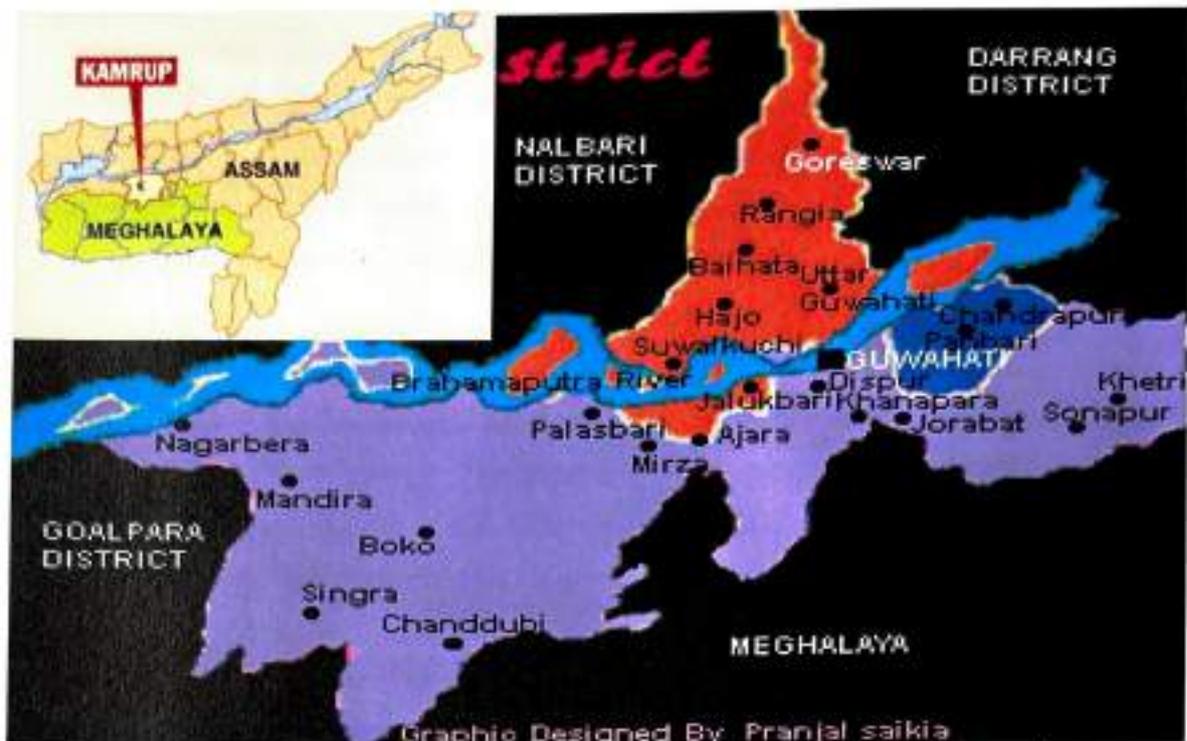


Figure 2.1: Map of Kamrup District. (Map of Assam-insert)

Thus, Kamrup district with the large Brahmaputra river is largely populated by tribal races as Bodo, Mishing, Chakma, Dimasa, Garo, Hajong, Khasi, Deori, Hojai, Kachari, Sonwal, Lalung, Mech, Miri, Rabha who form the core of Tribal community of Assam. Apart from the tribal population the district comprised of non-tribal population such as Kalita, Kuch, Bengali, Muslim, Bihari, etc.

In the present study, the tribal population which was found in the surveyed area was the Garo, Karbi, Boro, Rabha, Kachari, Tiwa and the tea tribes. A brief description of the tribes is given below:

The Garos:

The Garos are the earliest human group that migrated into North East India from the Tibetan plateau during the pre-historic period; the evidence of this being the Garo villages found across the Brahmaputra Valley, including many in and around the Guwahati metropolitan area. It is often

put forward that the famous Kamakhya was a Garo shrine before it was stolen by the patriarchal Aryans during the reign of the Koch kings. There are eight different clans of Garos with specific names like 'Abe', 'Chichak', 'Abeng', 'Gara-ganching', 'Atong', 'Ruga', 'Megam' and 'Matchi' as per their differently established territories. The basic occupation of the Garo people is agriculture and they usually follow the method of *Jhum* cultivation. They live in small villages with cluster of 22 to 25 houses. Agriculture is the primary occupation. Rice is the staple food (Tribes of Assam).

The Karbis:

Racially the Karbis belong to the Mongoloid group and linguistically to the Tibeto-Burman group. The Karbis, along with others entered Assam from Central Asia in one of the first waves of migration. From the pattern of distribution or habitation, the Karbi are divided into three groups, viz, Chinthong, Ranghang and Amri. They prefer to call themselves "Karbi" or "Arleng" meaning "men" in the Karbi language. The Karbi community eats a range of vegetables, greens and also meat and fish, cooked in bamboo tubes. Pork and larvae (*Eri and Mulberry*) are also considered to be Karbi delicacies.

The Boro:

The Bodo of Assam is a branch of great Bodo Group of Indo-Mongoloid family. The Bodos are basically an agrarian people; still using traditional means to irrigate their land. Their chief produce is classified into the 'Ahu' and the 'Sali' crops. Bodo villages are situated in the plains of the valleys of Assam, and hence they are categorized into what is known as the 'Plains tribe'. The Bodo people are expert in bamboo and cane craft; hence one would usually come across houses fashioned out of bamboo and wood in places where they live in majority. With the changing times, the Bodos have taken in large numbers to the services, business and other non-agricultural modes of livelihood. They rear the *eri*, *muga* and mulberry silk cocoons. Non-vegetarian items such as pork and chicken are their favorites. Small fish with bamboo shoots, roasted in bamboo tube or roasted by wrapping in banana leaf, is delicacy of the Bodo community.

The Rabha:

Rabha is one of the important tribes of Assam largely concentrated in Kamrup district of Assam. Traditionally, Rabha house is long and elongated bamboo dominated structure constructed on a rectangular plan on raised plinth of earth. Rabhas are known for their unique skill of hunting, trapping and fishing activities. Rice is the staple food of this tribe with dried fish, pork and rice beer. Like other tribes they also prepare a special kind of beer which is extremely popular. The Rabhas believe in 'evil spirits' and perform special pujas to appease the demons. In case of birth in the family the Rabhas consider the mother unclean till the umbilical cord of the baby falls.

The Kachari:

The Kachari community, both Sonowal Kachari and Mech Kachari, resides in Kamrup district. Like most other communities of Assam, they are non-vegetarian. The habitual food of Kacharis comprises savoury rice items alongside with a variety range of traditional vegetarian dishes. They love to add a few spices and chilies in their daily diet. The food habits reflect the unique cultural traits and traditional legacy. They do not prefer too much spicy food. Sonowal Kacharis also have also a habit of taking various light repasts (Jalpans) like, '*Komol Chaul*', '*Chira*', '*Pitha*', '*Chewa Diya Bora Bhat*', '*Chungat Diya Bhat*' etc. People prepare several drinks from rice and fruits. Some of the varieties of indigenous drinks of Kacharis are *Mod*, *Ruhi Mod*, and also *Serap*, from fruits and molasses.

Tea Tribes:

The Tea-tribe community basically represents the plantation workers engaged in tea cultivation. It is one of the largest communities in Assam. The tea labourers in Assam are preferably known as Baganiya/Banua/Chah Mazdoor (Sengupta, S. 2009). Rice and wheat flour chappati is their staple food. They prefer to consume salted black tea and puffed rice. The dried fish is liked by one and all. They like hot and spicy foods. They have rice beer (*Hariya*) which is prepared at home. (Sharma & Das, 2009).

Tiwa:

Tiwa is an ethnic group inhabiting the states of Assam and Meghalaya in Northeast India. They are recognized as a Scheduled tribe within the State of Assam. They were known as Lalungs. Although they are referred as Lalungs, they prefer the name Tiwa. Tiwas are divided into a number of clans that are further sub-divided into several sub-clans. They prefer non-vegetarian food. Rice, beer, pork, fowl, duck and fish are the favorite food items of the Tiwas. They also like various types of vegetables like bamboo shoots, creepers, tuber roots etc. Fish (fresh and dry) are liked much and so they still practice community fishing.

In the present study, both the tribal and non-tribal population were covered. The total population for the whole of the study was 300. Among the total population, 150 were pregnant mothers and 150 were lactating mothers. Out of that 150 pregnant mothers, 62 per cent were non-tribes and 38 per cent were tribes. The 38 per cent of tribes comprised of Garo (0.67%), Karbi (5.33%), Tea Tribe (6%), Boro (18%), Rabha (6%) and Kachari (2%).

Table 2.1: Distribution of pregnant and lactating mothers according to tribes

Age Group	Pregnant mothers (%)	Lactating mothers (%)	Total (%)
Garo	01 (0.67)	05 (3.34)	06 (2)
Karbi	08 (5.33)	07 (4.67)	15 (5)
Tea Tribe	09 (6)	06 (4)	15 (5)
Boro	27 (18)	33 (22)	60(20)
Rabha	09 (6)	10 (6.67)	19 (6.33)
Kachari	03 (2)	01 (0.67)	04 (13.33)
Tiwa	-	01 (0.67)	01 (0.33)
Non-Tribe	93 (62)	87 (58)	180 (60)
Total (%)	150 (100)	150 (100)	300 (100)

Among the population of 150 lactating mothers, 58 per cent were non-tribals and 42 per cent were tribals. The 42 per cent of tribals comprised of Garo (3.34%), Karbi (4.67%), Tea Tribe (4%), Boro (22%), Rabha (6.67%), Kachari (0.67%) and Tiwa (0.67%) respectively.

CHAPTER III

Socio-economic profile of pregnant and lactating mothers

CHAPTER III

Socio-economic profile of the respondents

Socioeconomic profile of the population in any study is very important as it describes the age, the educational background, income status and household characteristics which are some of the influential and important variables. So, in this chapter an attempt has been made to give a description of the study population i.e. pregnant and lactating mothers and also the background of the families.

Age:

The data presented in Table 3.1 shows that among pregnant mothers 44 per cent were in the age group of 18 to 22 years followed by 36 per cent in the age of 23 to 27 years. It was also seen that there were 2.67 per cent of pregnant mothers below the age of 18 years and they were from rural area. It was felt that there is an urgent need of awareness programme on family planning and appropriate age to attain pregnancy so that the health of the mothers is secured well. The vision document quoted DLHS-III (2007-08), mentions that about 40 per cent women in Assam in the age-group of 20-24 years are married before the legal age of 18 years. Though this is less than the national average of 42.9 per cent, the increase in mean age of marriage for women had a cascading effect on maternal and child health. There were 13.33 per cent of pregnant mothers between the age of 28 to 32 years and only 4 per cent were from the age group of 33 to 37 years. The respondents from the higher age group were the mothers who have attained pregnancy for the second time. It was observed that the preferable age of the attaining pregnancy was between 18 to 27 years. The age for lactating mothers shows that 45.33 per cent were in the age group of 23 to 27 years followed by 35.33 per cent in the age of 18 to 22 years. There were 11.33 per cent of lactating mothers in the age group of 28 to 32 years and 7.33 per cent in the age group of 33 to 37 years. It was observed that 0.67 per cent of the lactating mother was in the category of below 18 years of age. It is worth

mentioning that even after different awareness campaign about mother and child health programmes marriages are taking place below the age of 18 years and are mothers by the age of 18. Lack of awareness among people lead to malnourished mothers and high Maternal Mortality Rate (MMR). Against the national average of 212, MMR in Assam is 390, the highest in the country. (Census, 2010-11). Early marriage and pregnancy is related to high prevalence of malnutrition and anaemia among girls and women. Coupled with a high percentage of girls marrying below 18 years of age, these were major factors for high IMR and MMR in Assam.

Age Group	Pregnant mothers (%)	Lactating mothers (%)	Total (%)
Below 18 years	04 (2.67)	01 (0.67)	05 (1.67)
18-22 yrs	66 (44)	53 (35.33)	119 (39.67)
23-27 yrs	54(36)	68 (45.33)	122 (40.67)
28-32 yrs	20 (13.33)	17 (11.33)	37 (12.33)
33-37 yrs	06 (4)	11 (7.33)	17 (5.67)
Total (%)	150 (100)	150 (100)	300 (100)

Education:

The data presented in table 3.2 regarding educational status of the respondents shows that among pregnant mothers 7.33 per cent of the population are illiterate and only two per cent were just literate. Highest (44%) number of pregnant women studied up to Class X and only eight per cent were matriculate. It may be mentioned that the girls are allowed to study up to Class X but they are not allowed to sit in the matriculation examination as the parents feel that it is the age of marriage rather than studies. Another thing which was observed that even if the girls sit for the examination they fail due to lack of preparation and over-burdened with household chores. The second largest group (12.67%) was intermediate pass. Only 2.67 per cent of the population studied up to primary level, 7.33 per cent studied up to class V and 11.33 per cent studied up to class VII. The trend of educational qualification among the mothers drawn from AWCs, PHCs and hospitals were almost similar except in graduate and post graduate qualification. Few pregnant mothers (7) who were graduates and post graduates were taken from hospitals. The education of lactating

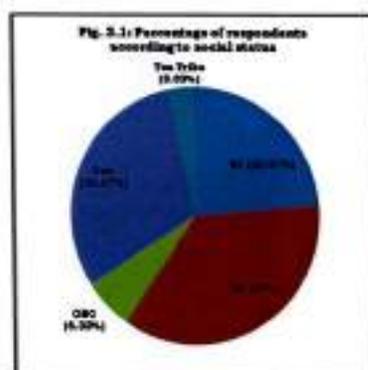
mothers shows that 11.33 per cent were illiterate and only four per cent were just literate. Highest (38%) number of pregnant women studied up to Class X and only 13.33 per cent were matriculate. The third largest group (12%) was intermediate pass. Only 6 per cent of the population studied up to primary level, 4.66 per cent studied up to class V and 6.66 per cent studied up to class VII. The educational status of the lactating women was not at all satisfactory. Regarding higher qualification, it was observed that 2.67 per cent were graduate and 0.67 per cent each was post-graduate and doctorate drawn from hospitals.

Table 3.2: Educational status of the respondents

Education	Pregnant mothers (%)	Lactating mothers (%)	Total (%)
Illiterate	11 (7.33)	17 (11.33)	28 (9.33)
Just literate	03 (2)	06 (4.0)	09 (3)
Up to primary level	04 (2.67)	09 (6.0)	13 (4.33)
Up to V	11 (7.33)	07 (4.66)	18 (6)
Up to VII	17 (11.33)	10 (6.66)	27 (9)
Up to X	66 (44)	57 (38.0)	123 (41)
Matriculate	12 (8)	20 (13.33)	32 (10.6)
Intermediate	19 (12.67)	18 (12.0)	37 (12.3)
Graduate	03 (2)	04 (2.67)	07 (2.33)
Post Graduate	04 (2.67)	01 (0.67)	05 (1.67)
PhD	-	01 (0.67)	01 (0.33)
Total (%)	150 (100)	150 (100)	300

Social status:

Of the total 300 population, 23.67 per cent belonged to SC category, 36 per cent were ST and only 3.33 per cent belonged to tea tribe (Fig. 3.1). Among general and OBC, general category of population were more (30.67%) than OBC (6.33%).



Occupation

Table 3.3 illustrates the occupation of the husband of the respondent's i.e. pregnant and lactating mothers. It was observed that 29.67 per cent family occupation was daily wage worker followed by 26.67 per cent was business. Agriculture was seen to be the source of income for 15.33 per

CHAPTER IV

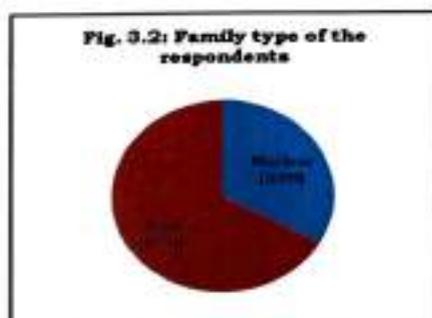
**Physiological state of the women and
rituals performed**

cent of the families. Only 8.33 per cent of the respondents family had a government job and a very few (4.66%) respondents family belonged to artisan.

Occupation	Pregnant mothers (%)	Lactating mothers (%)	Total (%)
Agriculture	21 (14.0)	25 (16.67)	46 (15.33)
Business	44 (29.33)	36 (24.0)	80 (26.67)
Government job	11 (7.33)	14 (9.33)	25 (8.33)
Company job	25 (16.67)	21 (14.0)	46 (15.33)
Artisan	05 (3.33)	09 (6.0)	14 (4.66)
Daily wage worker	44 (29.33)	45 (30.0)	89 (29.67)
Total (%)	150 (100)	150 (100)	300 (100)

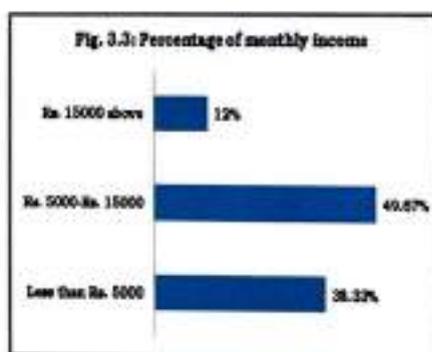
Family Pattern

Majority (67%) of the study population adapted to joint family pattern followed by nuclear family (33%) (Fig.3.2).



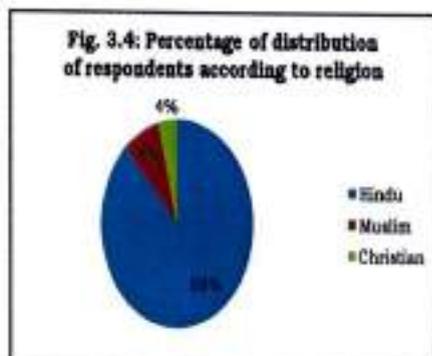
Family income:

Figure 3.3 reveals that, of the total 300 respondents most (49.67%) of the families had a monthly income of Rs. 5000 to Rs. 15000. The families who had an income of less than Rs 5000 were 38.33 per cent and very less (12%) population had a monthly income of above Rs. 15000.



Religion

Maximum (80%) of the study population followed Hinduism followed by Muslim (8%). Very few (4%) families of pregnant women followed Christianity (Fig. 3.4).



CHAPTER IV

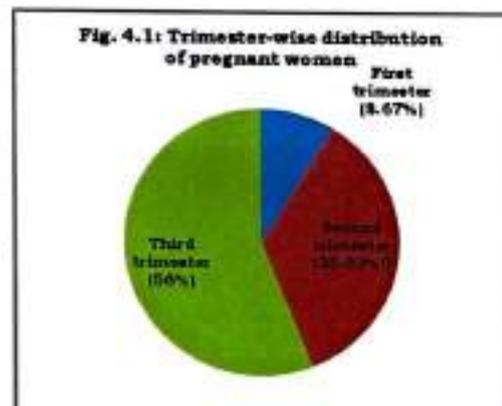
Physiological state of the women and rituals performed

In Indian context, rituals and ceremonies are very common and observed in many occasions. Pregnancy and lactation are two very important phases in a woman's life and many rituals are performed during pregnancy and lactation to ensure the health of the mother and the growing child. The term "Baby shower", is used to describe the celebrations and rituals associated with pregnancy and childbirth which have been followed from ancient times in India as well as in Assam. In Hindu tradition, the rituals are called by different names depending on the community the family belongs to. In northern India, it is known as *godbharaai*, *saadh* in West Bengal, *Seemantham* or *Valaikaapu* in south India. In Assam due to wide variations in caste and tribes, there are many terms used to describe the rituals such as *panchamrit*, *jeura*, *pak khuwa*, *sat mohiya* etc. These rituals are upheld by mothers, mother-in-laws, grandmothers and other elderly people in the family and are followed till today very religiously. The present chapter includes the physiological state of the women and rituals performed. Part I describes the pregnancy phase and Part II describes the lactation period and rituals followed during that phase.

Part - I (Pregnant women)

Period of pregnancy

Data reveals in Fig. 4.1 that of the total of 150 pregnant women, maximum (56%) of the women were in the third trimester of pregnancy followed by 35.33 per cent in second trimester. Very less (8.67%) belonged to the first trimester.



Rituals performed during pregnancy

Of the total 150 pregnant mothers, 58 per cent observe rituals and 42 per cent did not observe any kind of rituals during pregnancy period (Table 4.1). Among 58 per cent of pregnant mothers who observe rituals, 78.16 per cent were non-tribals and 21.84 per cent were tribals.

Table 4.2 depicts that among the highest number of respondents (40.23%) ritual is followed between 6-9 months followed by 29.89 per cent of respondents which follow pregnancy ritual between 3 to 6 months. There were some families (27.58%) which do the rituals two times for the same pregnancy i.e. between 3-6 months and just before delivery. Very few (2.3%) follow the ritual within 3 months of pregnancy. The period between conception to first trimester is usually accompanied by nausea and anorexia and the dietary intake is less. Consumption of food after three months is usually more and the pregnant mother is able to eat properly. Therefore, the rituals are performed usually after three months as after three months the foetus is safe in mother's womb and there is less possibility of miscarriage. Performance of rituals is followed for proper growth of the foetus and for safe delivery of the baby as well as the mother. Chatterjee, 1989 mentioned that during pregnancy, women who are in a good economic status and are able to access foods are also restricted through taboos and ritual observances, which are widely documented in traditional Indian household both rural and tribal population.

Among 42 per cent of respondents who do not follow any kind of ritual mentioned that as there are no elderly members in their families, there is no one to tell them about the ritual and also they do not have knowledge of following any such kind of rituals during pregnancy. It was mostly observed in nuclear families and in those marriages in which family concern was not there.

Table 4.1:
Observance of rituals during pregnancy

Yes (%)	No (%)
87 (58)	63 (42)

Table 4.2: Rituals performed during pregnancy

Rituals performed	Non-tribal (%)	Tribal (%)	Total (%)
Within 3 months	2 (2.94)	0	02 (2.3)
Between 3-6 months	20 (29.41)	6 (31.58)	26 (29.89)
Between 6-9 months	25 (36.76)	10 (52.63)	35 (40.23)
Between 3-6 & just before delivery	21 (30.88)	3 (15.79)	24 (27.58)
Total (%)	68 (100)	19 (100)	87 (100)

Among non-tribal's, rituals during pregnancy was more (36.76%) between 6 to 9 months followed by 30.88 per cent between 3 to 6 months and just before delivery whereas ritual performance among tribals was more between 6 to 9 months (52.63%) followed by 31.58 per cent between 3 to 6 months. Usually ritual performance during pregnancy was not very common among tribals compared to non-tribals. Tribals performed some rituals like *panchamrit*, *jeura* and *sat khuwa* as influenced by non-tribals.

It was observed that (Table 4.3), performance of pregnancy ritual was more (73.56%) among up to matriculate pregnant mothers than the illiterate (8.05%) and above matriculate (18.39%) respondents. The ritual performance among pregnant mothers in the income group of Rs 5000 to Rs 15000 was found to be highest (49.42%) than the rest income groups (Table 4.4). Performance of rituals is not related either with educational qualification or monthly income. Of course, the pregnant mothers mentioned that if income is more they invite all their relatives and neighbours to the ritual and if income is less than they do it among the family members or in temples.

Table 4.3: Rituals performed during pregnancy according to education

Rituals performed	Illiterate (%)	Upto matriculate (%)	Above matriculate (%)	Total (%)
Yes (%)	7 (8.05)	64 (73.56)	16 (18.39)	87 (100)

Table 4.4: Rituals performed during pregnancy according to income level (Monthly)

Rituals performed	Less than Rs. 5000 (%)	Rs. 5000-Rs. 15000 (%)	Above Rs. 15000 (%)	Total (%)
Yes (%)	28 (32.18)	43 (49.42)	16 (18.3)	87 (100)

Performance of rituals

Panchamrit is a sacred mixture of five ingredients i.e. milk, curd, honey, sugar and ghee in equal amounts. In Assam, *Panchamrit* is given during five months of pregnancy and it is believed that it acts as an energy booster for both the baby and the mother. In Bengali tradition, *panchamrit* is given in three months, five months and seven months which contain three types of fruits and three types of fruits/five types of sweets and five types of fruits according to the months. Along with *panchamrit*, in some families they give *payas* (rice kheer) and *prasad* (soaked whole Bengal gram, soaked split green gram and fruits) as offering to God. The ritual of *panchamrit* is often from the side of pregnant woman's family. Usually, five married women give the blessings to the would be mother. Besides, new clothes are gifted to the pregnant mother and then they feed the *panchamrit*. Data reveals that 42.53 per cent both tribal and non-tribal pregnant mothers consumed *panchamrit*.

It is believed that the ingredients used in preparing the *panchamrit* boosts physical strength, improves potency, improves immunity, vitalizes the brain, enhances intelligence, memory, grasping power, creative abilities and improves complexion. Khanum and Umapathy (1976) mentioned that milk with saffron gives strength to the baby as well as the mother and improves the complexion of the child to be born. It is believed from ancient times that if the pregnant mother is feed *panchamrit*, all the five sense organs will develop properly and saliva will not droll during lactation period.

Jeura, mostly celebrated between 7 to 9 months of pregnancy among non tribal respondents of Assamese and Muslim community and also among some tribals such as Rabha, Boro and Tea tribes. The main items for the ritual are rice kheer, sweets, fruits and Assamese delicacies as *laru* (specially made from jaggery and rice flour) and different kinds of *pitha* (rice cake). The pregnant mother wears new clothes and have lunch with her family, relatives and neighbours. Lunch includes rice, dal, vegetables with meat, fish and egg. The family members and elderly feel that from seven months of pregnancy the pregnant mother satiety increases for food and the child will grow better with the blessings of all. *Jeura* was reported to be celebrated by 12.64 per cent of tribal and non-tribal pregnant mothers.

Sat khuwa is celebrated in seventh month of pregnancy and it was seen to be observed only among tribals as well as non-tribals. Among non-tribals the ritual was observed among Muslim population. As the ritual is only celebrated in seventh month, seven types the food items are included such as fruits, sweets and traditional Assamese snack items as *laru* and different kinds of *pithas*. Altogether, 18.39 per cent of the pregnant women celebrated *sat khuwa*.

Phal pakkar which is celebrated in fifth month of pregnancy is not so common in Assamese non-tribal population. The food items included were five types of fruits and sweets. Only one (1.15%) respondent from AWC mentioned about the ritual.

Sat posotia was observed among muslim population in seventh month of pregnancy. Only 1.15 per cent of the population as a whole mentioned about the ritual. Different kinds of fruits, vegetables and milk were given to the pregnant women to eat as the elderly felt that in the third trimester of pregnancy all food items such as fruits, vegetables, milk and milk products are good for the health of the mother.

Simantan was celebrated among non-tribes of Bengali and Tamil population in seventh and ninth month of pregnancy. The food items included were seven types of fruits and sweets, rice kheer, rice flakes, curd, dal and non-vegetarian food. The ritual was observed by 4.59 per cent of respondents.

Pak khuwa is celebrated among muslims in fifth month of pregnancy. Only 1.15 per cent respondents followed the ritual in which milk, coconut and Assamese *pitha* (rice cake) is given to the pregnant mother to eat.

The ritual named **Sadavokham** is followed in seventh month of pregnancy among non-tribal Assamese population. Only 1.15 per cent of the respondent observed the ritual in which non-vegetarian items are given to the pregnant women to eat.

Gopini is the ritual which takes place in the ninth month of pregnancy. It is also called *gopini naam* as elderly women who are called *gopini* in Assamese sing religious song (*naam* in Assamese) with some traditional instruments. Before start of the *gopini naam*, prasad containing

soaked whole Bengal gram, soaked split green gram and fruits are arranged in a tray (called *sorai*) and offered to God. At the end of the ritual, the pregnant women are blessed by all *gopini* for safe delivery. It is observed in non-tribal Assamese population. Data (Table 4.5) reveals that 2.29 per cent of respondents followed the tradition.

Godh bharai is celebrated among Bengali and Bihari population of Assam. *Godh bharai* is a baby shower celebrated during seventh and ninth months of pregnancy to welcome the unborn baby

to the family and bless the mother-to-be with abundant joys of motherhood. In Hindi, *godh bharai* literally means to 'fill the lap' with abundance. The pregnant mothers wear new clothes and sit in a place where *puja* (a ritual) is done and thereafter the elderly female blesses the mothers and fills the lap with gifts like jewels and food items like fruits, dry fruits and sweets. Among the total population, 2.29 per cent of pregnant mothers observed the ritual.

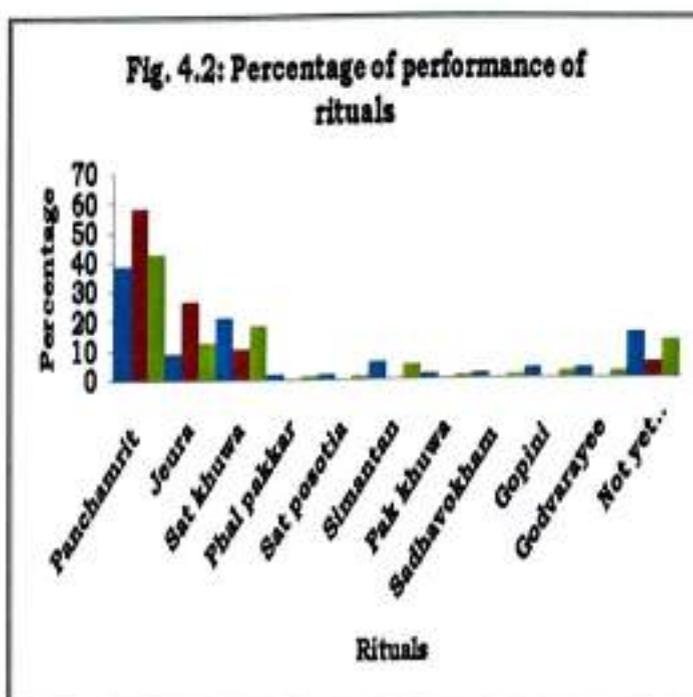


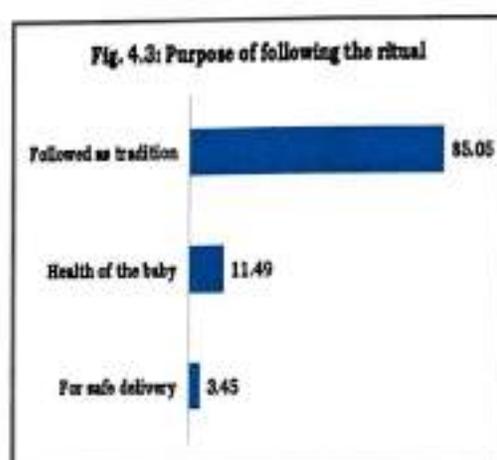
Table 4.5: Performance of rituals

Ritual	Non-tribals (%)	Tribals (%)	Total (%)
Panchamrit	26 (38.23)	11 (57.89)	37 (42.53)
Jeura	06 (8.82)	05 (26.3)	11 (12.64)
Sat khuwa	14 (20.59)	02 (10.5)	16 (18.39)
Phal pakkar	01 (1.48)	-	01 (1.15)
Sat posotia	01 (1.48)	-	01 (1.15)
Simantan	04 (5.88)	-	04 (4.59)
Pak khuwa	01 (1.48)	-	01 (1.15)
Sadavokham	01 (1.48)	-	01 (1.15)
Gopini	02 (2.94)	-	02 (2.29)
Godvarayee	02 (2.94)	-	02 (2.29)
Not yet performed	10 (14.78)	01 (5.2)	11 (12.64)
Total (%)	68 (100)	19 (100)	87 (100)

It was observed that of the total population, 12.64 per cent of pregnant women had not performed the rituals yet as have not completed the first trimester of pregnancy. The pregnant mothers mentioned that no rituals are performed before completion of first trimester as they do not want to inform the society about their pregnancy. Moreover the pregnant mothers feel that the first trimester is very crucial for the foetus. Remaining 42 per cent did not observe any ritual due to the reasons mentioned that there are no elderly members to advice them, as it is the second pregnancy or performance of ritual is not in their tradition and customs.

Purpose of following the ritual during first pregnancy

For one reason or another, rituals are performed during pregnancy in some tribes and non-tribes. Among the total population of 87 pregnant women who followed rituals during pregnancy, 85.05 per cent responded that the ritual is performed as a tradition with no reason behind. The mothers who followed the ritual for health of the baby



were 11.49 per cent and 3.45 per cent of mothers mentioned that the ritual was followed for safe delivery (Fig. 4.3). Although ritual is followed as tradition it helps the mother to feel special as the pregnant mother gets the attention and care. Psychologically also the mother feels happy which in turn is good for the baby. Moreover, the food items which are included in following the rituals like fruits, vegetables, non-vegetarian items and milk and milk products are required for proper growth and development of the foetus as well as the mother.

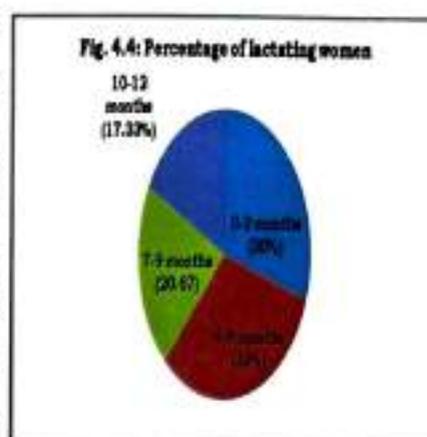
Performance of ritual in subsequent pregnancies

It is noteworthy here that, rituals are by and large observed only during first pregnancy. Only a small number of mothers (22.9 %) stated that in subsequent pregnancy also rituals were performed.

Part - II (Lactating women)

Physiological state of the women:

Data in Fig. 4.4 reveal of the total of 150 population (selected by multi-stage random sampling) of lactating women, maximum (32%) were in the four to six months of lactating phase followed by 30 per cent of respondents till three months of lactation. The lactating women who were in seven to nine months of lactation phase were 20.67 per cent and 17.33 per cent belonged to 10 to 12 months of lactation.



Rituals performed after delivery

After delivery of the baby, rituals were performed by 82 per cent of lactating mothers (Table 4.6). Less than one fourth (18%) of the lactating women mentioned that they do not follow any kind of ritual after delivery.

Table 4.6: Observance of rituals after delivery

Yes (%)	No (%)
123 (82)	27 (18)

Table 4.7 below depicts that highest (51.22%) ritual is followed within three months of delivery followed by 43.08 per cent of respondents which follow ritual just after delivery. Very less (2.44%) follow rituals between six to nine months of delivery and 3.24 per cent follow between three to six months after delivery. The tribals as well as the non-tribals followed the same rituals though the performance of rituals just after delivery among

Table 4.7: Ritual Performed after delivery

Ritual performed	Non Tribal (%)	Tribal (%)	Total (%)
Within 3 months	34 (47.89)	29 (55.77)	63 (51.22)
Between 3-6 months	2 (2.82)	2 (3.84)	4 (3.25)
Between 6-9 months	3 (4.22)	0	3 (2.44)
Just after delivery	32 (45.07)	21 (40.38)	53 (43.08)
Total (%)	71 (100)	52 (100)	123 (100)

tribal's was less (40.38%) compared to non-tribal (45.07%). Rituals after delivery are performed to celebrate the coming of the new born and the mother safely to home.

Table 4.8 below depicts the rituals performed after delivery according to educational level of respondents. It was observed that up to matriculate lactating mothers performed rituals more (72.35%) than above matriculate (16.27%) and illiterate (11.38%) mothers. Ritual performance among monthly income level of Rs 5000 to Rs 15000 was more (52.03%) than less than Rs 5000 (35.77%) and above Rs 15000 (12.19) lactating mothers (Table 4.9). So, it may be stated that neither educational qualification nor income level is the deciduous factor in performance of rituals after delivery. Rituals are performed as tradition and for health of the mother and the child.

Table 4.8: Rituals performed after delivery according to education

Rituals performed	Illiterate (%)	Up to matriculate (%)	Above matriculate (%)	Total (%)
Yes (%)	14 (11.38)	89 (72.35)	20 (16.27)	123 (100)

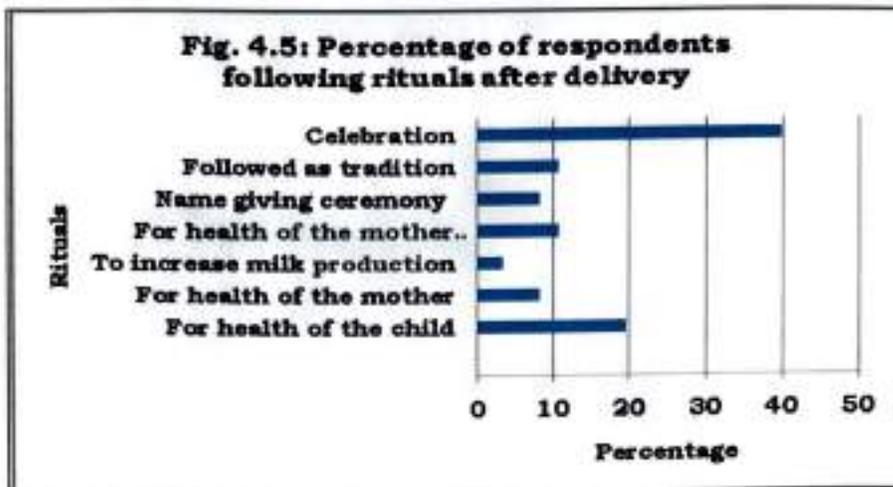
Table 4.9: Rituals performed after delivery according to income level (Monthly)

Rituals performed	Less than Rs. 5000 (%)	Rs. 5000-15000 (%)	Above Rs. 15000 (%)	Total (%)
Yes (%)	44 (35.77)	64 (52.03)	15 (12.19)	123 (100)

Reasons for following the ritual

Of the total population, maximum (39.83%) mentioned that they celebrate the coming of the new born as it is a joyous occasion for them. Less than one-fourth (19.51%) followed the ritual for health of the child. Small proportion (10.57%) each of the respondents followed the ritual for health of the mother and child as well as a tradition. Almost 8.14 per cent each of the lactating mothers mentioned that they follow the ritual after delivery for health of the mother and also as name giving ceremony of the child. Very few (3.25%) followed the ritual to increase milk production of the lactating women. A combination of six ingredients especially i.e. papaya, colocasia, potato, brinjal, gourds, radish is fed to the lactating mothers on the sixth day of delivery especially by elderly people with the belief that milk

production will be enhanced. As a whole, 18 per cent mentioned that they do not follow any kind of ritual (Fig. 4.5).



CHAPTER V

Food fads, fallacies and myth

CHAPTER V

Food fads, fallacies and myth followed during pregnancy and lactation

The nutritional requirement is highest during pregnancy and lactation period as women are generally vulnerable to undernutrition and anaemia. NFHS-3 indicators for Assam reveal that 36.5 per cent of women are undernourished and 72 per cent of pregnant women are anaemic. The nutritional status of mother prior to and during pregnancy has a strong impact on the reproductive performance and on the health of both mother and the child (Garza and Rasmussen, 2000). But in our country, these important periods are marked by different cultural beliefs and values. These beliefs and values give perspective to the meaning of food practices, taboos and myths adhered to during pregnancy and lactation. These food taboos and myth virtually exist in all human societies and are followed from generations. This chapter describes the food fads, fallacies and myth followed during pregnancy and lactation.

Part I (Pregnant women)

Dietary restriction followed

During pregnancy, it was seen that among all the food categories some items are restricted with the belief that it is harmful to the baby. Although there is no scientific reason for avoiding certain foods during pregnancy, it is avoided as elderly persons of the family insist on it. Harris M. *et. al* (1987) states, the regular avoidance of a food that turns into a tradition which ends up eventually as a food taboo. In the present study, dietary restrictions were observed on the following food items:

Non-vegetarian foods:

Of the total population of 150 pregnant mothers, 31.33 per cent avoided non-vegetarian foods and 68.67 per cent did not avoid non-vegetarian foods during pregnancy period. Data in Table 5.1 depicts that out

of 31.33 per cent (47 respondents), 51.86 per cent of the pregnant women avoided meat which includes chicken, beef, duck, pork, goat, pigeon and mutton from the conception till delivery with the belief that these are hot foods. The respondents felt that if they take meat the baby will suffer from allergy and asthma. The pregnant women mentioned that by taking broiler chicken, the placenta of the mother will be large and it will be difficult for the mother during delivery. They believe that by taking pigeon and duck meat, blood pressure will be high and it will also irritate the stomach. Similarly, 34.84 per cent of respondents avoided fish up to three months of pregnancy and a very few (14.89%) avoided egg up to seven months of pregnancy. Fish is avoided as because of vomiting tendency till three months and egg is avoided for high blood pressure, considered as hot food and the pregnant women may suffer from jaundice. Among tribal and non-tribal pregnant mothers, non-tribal pregnant mothers restricted more (80.85 %) non-vegetarian foods than the tribal (19.15 %) pregnant mothers. Tribals as such have affinity for non-vegetarian food. The small percentage of tribal pregnant mothers who avoided non-vegetarian foods mentioned that it is the non-tribal pregnant mothers who influenced them. Lakshmi, G (2013) in a study about food preferences during ante-natal period among tribal women of Andhra Pradesh found that eggs were avoided for the belief that child will be born with bald head. Non-vegetarian foods are good sources of protein and iron which are needed during pregnancy period and hence should never be avoided for cultural beliefs and practices.

Table 5.1: Dietary restriction of non-vegetarian foods

Non-vegetarian food avoided	Tribal (%)	Non-tribal (%)	Total (%)
Meat	05 (55.55)	19 (50)	24 (51.86)
Fish	03 (33.33)	13 (34.21)	16 (34.84)
Egg	01 (11.11)	06 (15.79)	07 (14.89)
Total (%)	09 (100)	38 (100)	47(100)

Vegetables:

Different kinds of vegetables ranging from green leafy, seasonal to sour vegetables were restricted by 78 per cent of pregnant mothers. Table 5.2 depicts the different kinds of vegetables avoided or restricted up to different

period of pregnancy. Maximum (39.32 %) of the respondents avoided papaya from conception till delivery for fear of abortion. Seasonal vegetables such as carrot, cucumber, ladies finger, pumpkin, squash and gourd were restricted by 18.8 per cent of pregnant women for fear of nausea. These seasonal vegetables are mentioned as slippery and cold food, which, if taken, the body will swell during pregnancy and the baby will have rough skin. All sour food items are restricted by 15.38 per cent of respondents up to delivery for fear of miscarriage and bleeding. The respondents felt that if they take sour food item more, they will suffer from anaemia. Banana flower was avoided by 10.25 per cent of pregnant women from three months of conception till delivery for the feeling that the size of the placenta will be like the plaintain (very big) and may be the cause of abortion. Bottle gourd and white gourd were avoided by 9.48 per cent up to delivery for fear of cough and cold as they consider it as cold food. Colocasia was avoided by 2.56 per cent of the respondents from five months till delivery for stomach irritation. Amaranthus and bitter vegetables, each were restricted by 1.71 per cent of respondents for feeling of nausea and headache respectively. Amaranthus was avoided up to delivery and bitter vegetable was restricted from three months to delivery. Jute plant was restricted by 0.85 per cent of pregnant women for feeling of nausea. In a study of socio-cultural aspects of pregnancy and lactation, Jesudason and Shirur (1980) found among 1106 pregnant and lactating women avoided papaya (72%), pumpkin (55%),

Table 5.2: Vegetables avoided during pregnancy

Food Stuff	AWC (%)	PHC (%)	Hospital (%)	Total (%)
Amaranthus	01 (1.31)	01 (5.55)	0	02 (1.71)
Banana Flower	09 (11.8)	03 (16.67)	0	12 (10.25)
Bitter Vegetables	02 (2.63)	0	0	02 (1.71)
Seasonal vegetables	07 (9.21)	09 (50)	06 (26.08)	22 (18.8)
Gourd	07 (9.21)	04 (22.22)	0	11 (9.48)
Colocasia	03 (3.94)	0	0	03 (2.56)
Papaya	28 (36.84)	01 (5.55)	17 (73.91)	46 (39.32)
Sour foods	18 (23.68)	0	0	18 (15.38)
Jute plant	01 (1.31)	0	0	01 (0.85)
Total (%)	76 (100)	18 (100)	23 (100)	117 (100)

banana (20%), egg (6%), chicken (11%), amaranths, bottlegourd, eggplant, pulses and toddy. Patil *et. al.* (2010) mentioned that the most common reason for restriction of specific fruits and vegetables was abortion.

It is worth mentioning that the respondents from AWCs, PHCs and hospitals avoided one or the other vegetable. But in comparison to tribal and non-tribal pregnant mothers, the tribal pregnant mothers have got less food fads than non-tribal in terms of vegetables (Table 5.3). Although avoidance of papaya and pineapple during pregnancy is followed from time immemorial it is proved scientifically in research studies. Adebisi *et. al.* (2002) 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.

Food Stuff	Tribal (%)	Non-tribal (%)	Total (%)
Amaranthus	-	02 (2.24)	02 (1.71)
Banana Flower	02 (7.14)	10 (11.24)	12 (10.25)
Bitter Vegetables	-	02 (2.24)	02 (1.71)
Seasonal vegetables	-	22 (24.72)	22 (18.8)
Gourd	03 (10.71)	08 (8.99)	11 (9.48)
Colacasia	01 (3.57)	02 (2.24)	03 (2.56)
Papaya	12 (42.85)	34 (38.28)	46 (39.32)
Sour foods	10 (35.7)	08 (8.99)	18 (15.38)
Jute plant	-	01 (1.12)	01 (0.85)
Total (%)	28 (100)	89 (100)	117 (100)

Fruits:

Fruits such as berry, mango, tamarind, pineapple, coconut, jackfruit, banana and sugarcane were avoided by 78 per cent of the pregnant mothers. Table 5.4 shows that maximum (82.05%) of the respondents restricted sour fruits like mango, tamarind, pineapple, berry from conception to delivery for fear of miscarriage. These are believed to cause dilution to blood. Other fruits like banana, jackfruit and coconut were avoided by 17.94 per cent of the respondents from two months till delivery for fear of miscarriage, religious belief. People also feel that the baby will be

very big in size if they take these fruits and it will be difficult to deliver. Sugarcane was also avoided for first two months of pregnancy for fear of abortion. Some research studies reveals consuming large amounts of pineapple may be harmful for the pregnant mother as pineapple contains the enzyme bromelain which is thought to help soften the cervix and bring the labour. So, eating large amounts will probably stimulate the tummy, which could also stimulate the uterus. Saikia S (2012) in a study among tea

garden tribal women reported that majority of the pregnant women consume seasonal locally available fruits, wild and cultivated

Fruits	Tribal (%)	Non-tribal (%)	Total (%)
Sour fruits (Berry, mango, tamarind, Pineapple)	15 (65.21)	81 (86.17)	96 (82.05)
Other fruits (coconut, jackfruit, banana, sugarcane)	08 (34.78)	13 (13.82)	21 (17.94)
Total (%)	23 (100)	94 (100)	117 (100)

green leafy vegetables

and other grown vegetables and avoided papaya and pineapple with the believe that it might abort the baby.

Remaining 22 per cent of the respondents have no restriction of any kind of fruits. Among tribal and non-tribal pregnant women it was observed that the non-tribal pregnant women avoided sour foods like berry, mango, tamarind and pineapple more than the tribal women.

Cereals and Pulses:

It was found that among the respondents majority (91.33%) of pregnant women have no dietary restriction on cereals and pulses being the staple food. Yet, it was observed that 6.67 per cent of selected sample avoided dals like black gram from five months of pregnancy till delivery as it is thought to be a cold food. Similarly, a small (2%) number of respondents avoided rice products such as puffed rice and rice flour up to seven months of pregnancy for the fear that the baby will get spot on the body (Table 5.4). Capoor (2000) in a study stated that pregnant women avoided eating pulses as they belief to cause gastric trouble in the stomach.

Spices and oilseeds:

Among the respondents, 18.67 per cent avoided chilli and spices in their meal due to the fear of stomach irritation, jaundice, gastricities, vomiting and for the feeling that it may impure their blood. Salt and sesame were restricted each by two per cent respondents from conception to delivery for fear of high blood pressure and nausea respectively.

Miscellaneous foods:

The data shows that alkali (*khar*) which is a common add on to a majority of the people of Assam was restricted by 19.33 per cent of pregnant women for fear of miscarriage, and also they believe big sized baby with dull brain will be born. Cow's colostrum (*Phehu*) were restricted by two per cent of selected pregnant women as a traditional custom. They also believed it to be bad for their health and for fear of miscarriage

Consumption of food during pregnancy

The table 5.5 reveals that maximum number of (31.33%) selected pregnant women consumed food as usually during the period of pregnancy. The percentage of pregnant women who consumed food more than their normal (before attaining pregnancy) intake was 20 per cent. These 20 per cent pregnant mothers felt that during pregnancy they should eat for herself as well as for the growing foetus. The elderly advised them to eat for two people. Fourteen per cent of pregnant mothers consumed food sometimes more when they feel either very hungry or they do not have the feeling of nausea and the remaining 22.67 per cent of the respondents consumed food whenever they felt hungry. The pregnant women who took food less than their usual intake was found to be 12 per

Table 5.5: Consumption of food during pregnancy

Consumption of food	Total (%)
As usual	47 (31.33)
More than usual	30 (20)
Sometimes more	21 (14)
Whenever felt hungry	34 (22.67)
Less than usual	18 (12)
Total (%)	150 (100)

cent and they mentioned that due to nausea they could not eat proper quantity of food during the first trimester of pregnancy.

Special food/dish included in diet

Special food during pregnancy was consumed by 80 per cent of women whereas remaining 20 per cent of respondents had not included any special food in their diet. The special foods mentioned by the pregnant mothers were green leafy vegetables, fruits/ dry fruits, meat, fish/dry fish, egg and milk. The frequency of consumption of special food is presented in table 5.6. Green leafy vegetable was consumed everyday by 26 per cent, sometimes by 28.66 per cent and very often by 7.33 per cent of pregnant mothers. Similarly, fruits and dry fruits were consumed everyday by 25.33 per cent, sometimes by 37.33 per cent and very often by 20 per cent. Fish and dry fish was consumed everyday by 5.3 per cent, sometimes by 34 per cent and very often by 8.66 per cent of respondents. Milk was consumed everyday by 22 per cent, sometimes by 5.33 per cent and very often by 3.33 per cent. Meat and egg were included very less as special food as it is stated to be a hot food. The pregnant mothers who felt that during pregnancy the foods mentioned in table 5.4 has to be taken for better health of the mother as well as the baby included the special foods.

Table 5.6: Frequency of consumption of special food during pregnancy (n=150)

Food stuff	Green leafy vegetable			Fruits/ Dry fruits			Meat			Fish/Dry fish			Egg			Milk		
	EV (%)	S (%)	VO (%)	EV (%)	S (%)	VO (%)	EV (%)	S (%)	VO (%)	EV (%)	S (%)	VO (%)	EV (%)	S (%)	VO (%)	EV (%)	S (%)	VO (%)
Total	26	28.66	7.33	25.33	37.33	20	20	34	8.66	5.3	34	8.66	22	5.33	3.33	05	08	3.33

*EV (Everyday), S (Sometime), VO (Very often)

Inclusion of special food among the respondents of hospitals was found to be more (91.67%) followed by PHCs (85.71%) and AWCs (76.19%).

It may be noted that urbanization has not influenced in inclusion of special foods as traditions and customs are followed till today both in urban and rural areas (Table 5.7). Among tribal and non-tribal respondents, it was found that that 80.64 per cent of non-tribal and 78.94 per cent of tribal included special foods during pregnancy (Table 5.8).

Table 5.7: Inclusion of special food during pregnancy

Special food	AWC (%)	PHC (%)	Hospita 1 (%)	Total (%)
Yes	80 (76.19)	18 (85.71)	22 (91.67)	120 (80)
No	25 (23.81)	03 (14.29)	02 (8.33)	30 (20)
Total (%)	105 (100)	21 (100)	24 (100)	150 (100)

Table 5.8: Inclusion of special food among tribal and non-tribal during pregnancy

Special food	Non Tribal (%)	Tribal (%)	Total (%)
Yes	75 (80.64)	45 (78.94)	120 (80)
No	18 (19.35)	12 (21.05)	30 (20)
Total (%)	93 (100)	57 (100)	150 (100)

It was observed that (Table 5.9) inclusion of special food among above matriculate respondents was more (88.46 %) than other groups. The special foods mentioned by the pregnant mothers and which were included during pregnancy period were green leafy vegetables, fruits/dry fruits, non-vegetarian foods and milk and milk products. The pregnant mothers who have higher qualification included special foods more as they were aware that the requirement for protein, iron, vitamins and minerals increases during pregnancy period.

Data in Table 5.10 shows that inclusion of special foods in the income level of less than Rs 5000/month was less than the above Rs 5000/month. With rise in income level the people could afford to buy the special foods like fruits/ dry fruits, meat, egg, fish/dry fish and milk. Daba et. al. 2013 reported in a study of pregnant mothers and knowledge of maternal nutrition that there was a positive significant relation between information about nutrition, educational status of mothers and family income and nutrition knowledge of mothers during pregnancy.

Table 5.9: Special food included during pregnancy according to education

Rituals performed	Illiterate (%)	Upto matriculate (%)	Above matriculate (%)	Total (%)
Yes	6 (54.54)	90 (79.65)	23 (88.46)	119 (79.33)
No	5 (45.45)	23 (20.35)	3 (11.54)	31 (20.67)
Total	11 (100)	113 (100)	26 (100)	150 (100)

Table 5.10: Special food included during pregnancy according to income level (Monthly)

Rituals performed	Less than 5000 (%)	5000-15000 (%)	Above 15000 (%)	Total (%)
Yes	43 (75.43)	60 (82.19)	16 (80)	119 (79.33)
No	14 (24.56)	13 (17.81)	4 (20)	31 (20.67)
Total	57 (100)	73 (100)	20 (100)	150 (100)

Consumption of homemade rice beer

Homemade rice beer is consumed sometimes by 11 (7.33%) of pregnant women followed by 3 (2%) as occasional drinkers. Very few (0.67%) included rice beer everyday whereas 90 per cent of respondents did not consume rice beer throughout the period of pregnancy. It was also found that the respondents who consumed rice beer were all tribals and mostly from Boro, Rabha and Karbi community. The various reasons for consumption of rice beer mentioned by the pregnant women were provide heat to the body, women's desire to consume, gives relaxation, energy and temptation and for health of the baby.

Tribal women have the habit of smoking than the non-tribal women. It is happy to note that apart from the habit of smoking among tribal none of the tribal pregnant women smoked during their entire pregnancy period.

Part II (Lactating women)

Consumption of food during lactation

Table 5.11 presents the trend of consumption of food during the lactation period. The survey result gives a scenario that 45.33 per cent lactating mothers consumed more food during the lactation period; whereas 25.33 per cent follow their usual and 23.33 per cent ate whenever they felt hungry. Six per cent of the selected respondents could not have food in proper amount which is less than usual due to their less appetite. Respondents also mentioned that their food consumption usually depend on their economic conditions.

Consumption of food	Total (%)
As usual	38 (25.33)
less than usual	09 (6)
More	68 (45.33)
Whenever felt hungry	35 (23.33)
Total (%)	150 (100)

Special food included in diet during lactation period

The study found that 84 per cent of the selected sample of lactating women included special food in their daily diet; whereas remaining 16 per cent of them did not consume any special food in their diet during the lactation period. Nath and Maiti (2012), in a study of *Sylheti Bengali* community of Barak Valley, Southern Assam found that a special preparation known as *Shuktani* is given to women during post parturition, to reduce the weakness of the mother after delivery and in lactation period which is prepared with 35 species of angiosperms consisting of leaves, vegetable buds, fruits, seeds, stems and flowers.

Among tribal and non-tribal respondents similar responses (84.37 per cent and 83.72 per cent) were received regarding inclusion of special food during lactation period.

Education wise (Table 5.12) it was observed that the above matriculate respondents included special foods more (91.67 %) than below matriculate (85.32 %) and illiterate (64.7 %) lactating mothers. Likewise, the

respondents from income level of below Rs 5000/month included special foods less than the above Rs 5000/month income group (Table 5.13).

Table 5.12: Special food included during lactation according to education

Rituals performed	Illiterate (%)	Upto matriculate (%)	Above matriculate (%)	Total (%)
Yes	11 (64.70)	93 (85.32)	22 (91.67)	126 (84)
No	6 (35.29)	16 (14.67)	2 (8.33)	24 (16)
Total (%)	17 (100)	109 (100)	24 (100)	150 (100)

Table 5.13: Special food included during lactation according to monthly income level (Monthly)

Rituals performed	Less than 5000 (%)	5000-15000 (%)	Above 15000 (%)	Total (%)
Yes	47 (81.03)	65 (85.53)	14 (87.5)	126 (84)
No	11 (18.97)	11 (14.47)	2 (12.5)	24 (16)
Total (%)	58 (100)	76 (100)	16 (100)	150 (100)

Special foods included during lactating period in the studied population:

Soisristi:

Soisristi is eaten mostly by Bengali community on the sixth day of the birth of a child as the elderly people feel that it will increase milk production in the lactating mothers. It is a combination of six ingredients especially i.e. papaya, colocasia, potato, brinjal, gourds, radish which is prepared as a vegetable and no spices are added. It was observed that 16 (15.23%) of the respondents from Bengali community consumed this item. As the item is prepared with six vegetables and given to the lactating mother on the sixth day after delivery the special food as well as the ritual is termed as Soisristi.

Jhaal:

Jhaal is a special food which is given to the lactating mothers after fifth day of the birth of the baby. In some communities, this preparation is given upto 15 days to get relief from body pain. The *Jhaal* is prepared by mixing ingredients such as white gourd, local herbs like shunk vine (*Paederia foetida*), asiatic pennywort (*Centella asiatica*), curry leaves, etc.

The important ingredient is the spices as black pepper with ginger and garlic. Some people also add eggs or dry fish to this preparation.

Onion seeds chutney:

Special chutney is prepared with onion seeds and garlic which is made to fine paste and given to the lactating mothers after delivery. The reasons for including this chutney were to get rid from the body pain of the women after delivery and also for milk production. The chutney was taken by eight (5.33 %) of the lactating mothers.

Plantain flower dish:

Plantain flower is prepared as vegetable and included in lactating mother's diet. Respondents feel that plantain flower is iron rich and it will help to dry the womb and reduce overflow of milk production. Of the total 150 respondents, 13 (8.67%) mentioned of including plantain flower in their diet after delivery.

Fish with herbs:

Local fish especially small variety is prepared with herbs as shunk vine (*Paederia foetida*), asiatic pennywort (*Centella asiatica*), curry leaves, etc. with black pepper and given to the lactating mothers for relief from body pain and energy. It was found that of the total 150 respondents, 95 (63.33%) included local fish with herbs after delivery. Local herbs without fish was mentioned by 32 (21.33%) of lactating mothers. They prefer local herbs as chutney, vegetable or curry. A typical variety of fish known as fresh water eel (*Amphipnous cuchia*) is preferred by 20 (13.33%) of the respondents as they felt that inclusion of this fish will increase the level of haemoglobin in blood.

Dietary restriction followed during lactation

Fruits

Fruits were restricted by 60.66 per cent of lactating mothers. Table 5.14 reveals that after birth various fruits were restricted by a mother especially when her baby falls sick or suffer from cough and cold. Sour fruits like tamarind or any type of sour items were avoided by 74.73 per cent of selected respondents upto the six months of delivery for not to get any infection in internal wounds of mother and also the fear that baby may get dysentery; whereas among the selected respondents. Banana, coconut, and some other fruits like pineapple also were not consumed by them during the lactation period as these are considered to be cold food and

Table 5.14 : Fruits restricted during lactation period

Fruits restricted	Tribal (%)	Non-Tribal (%)	Total (%)
Sour food	03 (4.41)	65 (95.58)	68 (74.73)
Others (Banana, coconut, pineapple)	04 (17.39)	19 (82.60)	23 (25.27)
Total (%)	07	84	91 (100)

the baby may get cold and cough and were avoided by 25.27 per cent of lactating mothers. Remaining 39.34 per cent were not having any fruits restriction. Among tribals and non-tribals restriction of fruits were observed more among non-tribals (96.55%) than tribals (11.11%).

Non-vegetarian

Table 5.15 indicates the restriction of non vegetarian food during lactation period. It was found that fish, meat and egg were restricted by lactating mothers upto six month or one year after the birth of baby. Fish (fresh/dry) was restricted by 41.78 per cent due to the fear of that the baby will get stomach irritation or loose motion, meat was not consumed by 36.71 per

Table 5.15: Restriction of non-vegetarian foods during lactation (n=150)

Non-veg restricted	Total (%)
Fish	33 (41.78)
Meat	29 (36.71)
Egg	17 (21.52)
Total (%)	79 (100)

cent of selected mothers as it is considered as hot food and they believed it may give stomach irritation and small pimples on the skin of the baby. Egg

was also avoided by 21.52 per cent during the period of three to seven months of baby because of elder's advice and some others reasons like it may cause jaundice, stomach irritation to the baby and it is also considered as hot food. The remaining 48 per cent of respondents have no dietary restriction of non-vegetarian foods. Non-tribals restricted non-vegetarian foods more (67.82%) than the tribals (31.74%).

Vegetables

Table 5.16 shows the vegetables which are excluded during lactation period. Among the total of 150 lactating mothers, gourds were restricted by 18 per cent as they feel it is a cold food and if they take it the baby may suffer from cough and cold. Brinjal and colocasia bulb were restricted by 30 per cent and 14.67 per cent of the respondents respectively these are slimy food and may cause harm to the child. Pumpkin was avoided by 22 per cent women as it is a hot food. Green leafy vegetables like drumstick leave, pumkin leave, amaranthus, etc. are avoided as the respondents feel that new born baby will have greenish loose stools and stomach upset.

Table 5.16: Vegetables restricted during lactation

Vegetables restricted (n=150)	Gourds (%)	Brinjal (%)	Colocasia bulb (%)	Pumpkin (%)	Green leafy vegetables (%)
Total (%)	27 (18)	45 (30)	22 (14.67)	33 (22)	14 (9.33)

Others

Table 5.17 shows the avoidance of foods like pulses, spices, curd, etc during lactating period. Among the total of 150 lactating mothers pulses like black gram, lentil and kesari dal were avoided by 28.67 per cent. Black gram was avoided being a cold food and it may cause cough and cold of the baby, lentil and keshari dal was avoided as hot food and for the fear that mother's milk will dry off. Spices and oil was avoided by 41.33 per cent for fear of stomach irritation and gastracities and curd was avoided by 9.33 per cent of

the respondents being a cold food and the baby might get cough and cold. *Khar* (traditional alkali) was restricted by 11.33 per cent of lactating mothers for fear that mother's milk may secrete the alkali in milk and this alkali may make the child less intelligent. Some mothers who had caesarian delivery avoided the alkali for fear that the womb may not dry.

Table 5.17: Other foods restricted during lactation

Foods restricted (n=150)	Pulses (%)	Spices & oil (%)	Curd (%)	Alkali (<i>Khar</i>) (%)
Total (%)	43 (28.67)	62 (41.33)	14 (9.33)	17 (11.33)

Consumption of alcoholic beverages

Table 5.18 shows drinking alcoholic beverages is not mere a habit for women of tribal community but yet during lactation period they avoided drinking to some extent. It was happy to note that the liquor was not consumed by 90.67 per cent of selected lactating mothers but it was prepared by them for their husbands or other male members at home. In tribal communities it was observed that use of homemade rice beer plays an important role in the socio-cultural life of the tribal people as it is found to be associated with many occasions like merry making, ritual ceremonies during birth of a child, festivals and marriages. And it is compulsory that the homemade rice beer to be used in religious ceremony to be prepared by the female members of the family. While preparing most of the tribal lactating mothers mentioned that they had the temptation to drink but they resisted the temptation for the health of the baby. Among the 9.33 per cent (14 respondents) of lactating mothers who consume homemade rice beer everyday were 7.14 per cent (1), sometimes were 64.28 per cent (9) and occasionally were 28.57 per cent (4). The lactating mothers who consume homemade rice beer were from Rabha, Boro and Karbi community.

Table 5.18: Consumption of homemade rice beer by lactating mothers (n=150)

Consumption of rice beer	Total (%)
Everyday	01 (7.14)
Sometimes	09 (64.28)
Occasionally	04 (28.57)
Total (%)	14 (100)

Inclusion of special item in diet for enhancement of milk production

During lactation period, some of the food items like colocasia, papaya, black pepper, sesame, etc were consumed as special food which is given to the mothers if the mothers are not able to feed breast milk. Some mothers feel that their milk production is less. In such cases the elders consider that giving special foods will help the mothers to increase milk production. Two varieties of colocasia leaves and stem known as *dohi koshu* and *knoll koshu* are given as boil with dal or prepared with spices and taken by 23.33 per cent the lactating mothers. Similarly, raw papaya was consumed by 29.33 per cent of lactating mothers as it increases milk production. Black pepper was added to most of the dishes like vegetables, curries, etc which was taken by 13.33 per cent of lactating mothers. Chicken soup which is prepared with spices like ginger, garlic and pepper powder was given to 16 per cent of lactating women as the elderly people feel that it increases milk production. Small chick or local variety of chicken is used for the preparation of soup (Table 5.19). Among tribal and non-tribal lactating mothers 87.36 per cent of non-tribal and only 14.28 per cent of tribal lactating mothers included special food in their diet.

Table 5.19: Special item given for milk production (n=150)

Special food	Colocasia (%)	Papaya (%)	Black pepper (%)	Chicken soup (%)	Sesame (%)	Dry fish (Hindol) (%)	Pulse (Lentil) (%)
Total (%)	35 (23.33)	44 (29.33)	20 (13.33)	24 (16)	30 (20)	4 (2.67)	10 (6.67)

CHAPTER VI

Care of the new born

CHAPTER VI

Care of the new born

During pregnancy the mother is taken care of in terms of food, nutrition, health and hygiene by the family members. After the child is born, care should be taken to protect the child from infection and diseases. During this period neonatal resuscitation is required to support the establishment of breathing and circulation. Before the child is born, the baby gets nutrition and oxygen from the placenta of the mother. After the baby is born the baby has to get oxygen from his lungs and during this transition period the baby needs support to breath smoothly. After neonatal resuscitation, the next important aspect is care for the new born and early initiation of breast milk. Initiation of breast milk should be done immediately after birth or at least within one hour of delivery. This chapter deals with initiation of breast milk, exclusive breast feeding and complementary feeding.

Time of initiation of breast feeding

Data in table 6.1 reveals that among 150 nursing mothers, 36.67 per cent of babies were initiated breast feeding immediately after birth and 30.67 per cent initiated within one hour of birth. One-fourth (24.67%) nursing mothers initiated breast milk after one hour on the first day of delivery. Very few nursing mothers initiated breast milk after second day. Overall the percentage of early initiation was seen to be good and majority of

Table 6.1: Time of initiation of breast milk (n=150)

Time of initiation	Tribal (%)	Non-tribal (%)	Total (%)
Immediately after birth	26 (41.26)	29 (33.33)	55 (36.67)
Within ½-1 hour of birth	23 (36.5)	23 (26.43)	46 (30.67)
On the 1 st day (After 1 hour)	12 (19.04)	25 (28.73)	37 (24.67)
On the 2 nd day	0	04 (4.59)	04 (2.67)
On the 3 rd day	02 (3.17)	03 (3.44)	05 (3.33)
After 3 rd day	0	03 (3.44)	03 (2)
Total (%)	63 (100)	87 (100)	150 (100)

the lactating mothers mentioned that they were taking counselling from AWCs and PHCs before delivery. Early and timely initiation of breast milk was observed more among tribal nursing mothers than non-tribal mothers.

Pre-lacteal food

Pre-lacteal feed means any food except mother's milk provided to a newborn before initiating breastfeeding. Pre-lacteal feeding is a major barrier to exclusive breastfeeding. Data in Table 6.2 reveals that out of the total nursing mothers, 62 per cent did not introduce pre-lacteal food and the remaining 38 per cent introduced one or the other pre-lacteal food. Majority (40.35%) introduced honey before initiation of breast milk followed by 19.29 per cent where plain water was used as a pre-lacteal food. Tinned milk was introduced by 14.03 per cent of the mothers and very few (5.26%) gave animal milk as pre-lacteal food. Remaining 21.05 per cent gave woodward gripe water, homemade rice flour mix, water dissolved with sugar cubes (talmisiri), *panchamrit*, sugar and basil leaf (tulsi) soaked water as pre-lacteal food. Highest (80.95%) of respondents from PHC did not introduced pre-lacteal food after birth. Almost same percentage (59.04% and 58.33%) of respondents from AWCs and hospitals did not introduced pre-lacteal food. In all, maximum nursing mothers belonging to Anganwadi areas gave pre-lacteal foods before initiation of breast milk (Table 6.2). it may be mentioned that more awareness is required during ante-natal period of pregnancy so that we can reduce the percentage of introducing pre-lacteal foods.

Table 6.2: Pre-lacteal food given (n=150)

Pre-lacteal	AWC (%)	PHC (%)	Hospital (%)	Total (%)
Not introduced	62 (59.04)	17 (80.95)	14 (58.33)	93 (62)
Plain water	08 (72.72)	01 (9.09)	02 (18.18)	11 (19.29)
Animal milk	02 (66.66)	0	01 (33.33)	3 (5.26)
Honey	18 (78.26)	03 (13.04)	02 (8.69)	23 (40.35)
Tinned milk	05 (62.5)	0	03 (37.5)	08 (14.03)
Any other, Specify	10 (83.33)	0	02 (16.66)	12 (21.05)
Total (%)	105	21	24	150

Among tribal and non-tribal nursing mothers, 77.77 per cent of tribal mothers and 50.5 per cent of non-tribal mothers did not introduce pre-lacteals before breast feeding.

Exclusive breast feeding

Exclusive breastfeeding means that an infant receives only breast milk with no additional foods or liquids, not even water up to six months of age. Exclusive breastfeeding helps in child survival, growth and development. Infant and young child feeding guidelines (2010) recommends that all infants should be fed exclusively on breast milk until they are six months of age and continued to be breastfed till 2 years or beyond. Breastfeeding is advantageous for the baby, the mother and the society. Before a baby is born it is protected within mother's womb from all infections and after birth breastfeeding takes over the protection process. The milk which is secreted for the first few days is known as colostrum and that should be given to the baby as it provides resistance to the baby against various diseases and infections. Data in table 6.3 depicts 84.84 per cent of the mothers fed breast milk exclusively for six months. Only few (7.52%) each mothers fed breast milk less than four months or till four months respectively. Thirty-eight per cent of the total respondents are stated as "not applicable" as they have introduced pre-lacteal food, thus, exclusive breast feeding failed. Exclusive breast feeding was observed more (70%) among mothers from AWWs followed by 16.45 per cent from PHCs. Only 12.65 per cent of mothers from hospitals fed their babies exclusively for six months.

Table 6.3: Duration of exclusive breast feeding (n=150)

Duration of exclusive breast feeding	AWC (%)	PHC (%)	Hospital (%)	Total (%)
Less than 4 months	03 (42.85)	03 (42.85)	01 (14.28)	07 (7.52)
Till 4 months	03 (42.85)	01 (14.28)	03 (42.85)	07 (7.52)
Till 6 months	56 (70.88)	13 (16.45)	10 (12.65)	79 (84.84)
Total (%)	62	17	14	93 (100)

A similar percentage of 79.59 per cent and 77.27 per cent of tribal and non-tribal nursing mother's breast fed their children exclusively for six months.

Introduction of complementary food

After six months, infant's requirements cannot be met with breastmilk alone. So, after six months, it is the time to begin complementary foods, which should be nutritious, adequate and not contaminated. This is necessary to prevent malnutrition including anemia. During this period additional foods and fluids are provided to the baby along with breastmilk. Table 6.4 reveals that 66.67 per cent of the mothers introduced complementary foods on completion of six months and 11.33 per cent introduced before six months. Less than one-fourth (22%) nursing mothers introduced complementary food after seventh month onwards. Complementary food if not introduced at the right time may lead the children towards undernourishment from an early age.

The percentage of tribal nursing mothers who introduced complementary food at the right time were more (71.42%) than the non-tribal nursing mothers (63.21).

Complementary feeding	Tribal (%)	Non-tribal (%)	Total (%)
Before 6 months	03 (4.76)	14 (16.09)	17 (11.33)
On completion of six month	45 (71.42)	55 (63.21)	100 (66.67)
After seventh month onwards	15 (23.8)	18 (20.68)	33 (22)
Total (%)	63 (100)	87 (100)	150 (100)

Continuation of breast feeding along with complementary food

After introduction of complementary food, breast milk should be continued up to the age of two years so that the children above six months are not deprived of important source of energy, protein, vitamin A and vitamin C. From the data (Table 6.5), it is seen that majority (83.33%) of the

mothers continued breast feeding up to two years and beyond, 12.67 per cent up to two years and only 4 per cent continued till one year.

Table 6.5: Breast feeding continued along with complementary feeding

Breast feeding with complementary feeding	Tribal (%)	Non-tribal (%)	Total (%)
6 months- 1 year	02 (3.17)	04 (4.59)	06 (4)
1 year-2 years	10 (15.87)	09 (10.34)	19 (12.67)
2 years and above	51 (80.95)	74 (85.05)	125(83.33)
Total (%)	63 (100)	87 (100)	150 (100)

CHAPTER VII

Impact of information technology on
following the food
fads, fallacies and myth during
pregnancy and lactation

CHAPTER VII

Impact of information technology on following the food fads, fallacies and myth during pregnancy and lactation

Food fad, fallacies and myth about food are the terms used to describe like, dislike, false belief and misconception about foods with neither any scientific explanation nor written in any prescribed books. These beliefs or misconceptions are tales of unknown origin handed down by tradition, sometimes orally and sometimes by written word only in religious scriptures. They tell the story of the origin of the world, of human beings and animal species, of death, and of the relationship between man and supernatural beings. In today's world, information technology has advanced a lot and has made an influence on the knowledge and the way we work. In this chapter, an effort is made to know about the impact of information technology on the traditional beliefs and myth of food during pregnancy and lactation.

Sources of food fads, fallacies and myths during pregnancy

Data in table 7.1 reveals that, majority (89.62%) of the pregnant mothers main source of food fads, fallacies and myth were the family members followed by 8.89 per cent who were the neighbours and village people. Only few (1.48%) got the information from television. Among tribal and non-tribal groups, family members were the common source of disseminating information on food fads and myths.

Sources of food fads, fallacies and myths	Tribal (%)	Non-tribal (%)	Total (%)
Family members	47 (88.67)	74 (90.24)	121 (89.62)
Television	01 (1.89)	01 (1.22)	2 (1.48)
Any other	05 (9.43)	07 (8.54)	12 (8.89)
Total (%)	53 (100)	82 (100)	135 (100)

The response to the question of willingness of the pregnant mothers to follow the food fads and fallacies was that among the total 135 pregnant mothers who followed foods

fads and fallacies during pregnancy 85.92 per cent wanted to follow and 15.55 per cent do not want to follow. Among tribals and non-tribals, the willingness to follow the food fads and

fallacies were observed more (95.12) among non-tribals than tribals (71.69). (Table 7.2).

Of the total population, 85.92 per cent of pregnant mothers followed food fads for one reason or the other depicted in Table 7.3. About one fourth (24.13 %) followed the food fads and fallacies for better health of themselves as well as the foetus, 19.82 per cent followed for better health of the foetus

Table 7.2: Willingness to follow the food fads, fallacies and myths during pregnancy (n=150)

Willingness to follow	Tribal (%)	Non-tribal (%)	Total (%)
Yes	38 (71.69)	78 (95.12)	116 (85.92)
No	15 (28.38)	04 (4.88)	21 (15.55)
Total (%)	53 (100)	82 (100)	135 (100)

Table 7.3: Reasons for following food fads, fallacies and myths during pregnancy (n=150)

Reasons	Total (%)
Better health of the mother and foetus	28 (24.13)
For health of the foetus	23 (19.82)
Elderly advice	16 (13.79)
Avoid complications	11 (9.48)
Miscarriage	8 (6.89)
For safe delivery	14 (12.06)
Advice from health personals	2 (1.72)
Tradition	7 (6.03)
Previous experience of 3 miscarriages	6 (5.17)
Total (%)	116 (100)

and 13.79 per cent followed as elderly persons advised them. The other reasons of following the fallacies were to avoid complications during pregnancy (9.48%) such as stomach problem, stomach irritation; infection, etc. during pregnancy; miscarriage (6.89%), for safe delivery (12.06%), on advice from health personal (1.72%), previous experience of miscarriage (5.17%) and as a tradition (6.03%).

Remaining 15.55 per cent of respondents did not follow any kind of food fads (Table 7.4) and the respondents mentioned the reasons as no elder people to give advice (9.5%), feels unscientific (33.33%), desire to have all items (52.38%) and doctors' advice (4.76%).

Table 7.4: Reasons for not following the food fads, fallacies and myths (n=150)

Reasons	Total (%)
No elder people to give advice	2 (9.5)
Feels unscientific	7(33.33)
Desired to have all items	11 (52.38)
Doctor's advice	1 (4.76)
Total (%)	21 (100)

Sources of food fads, fallacies and myths during lactation

Majority (94.4%) of the lactating mothers mentioned that the sources of food fads, fallacies and myths during lactation were the family members and second source of information which is 5.6 per cent only were from health personals.

Majority (85.33 %) of lactating mothers showed their willingness to follow the fallacies during lactation and 14.67 per cent did not want to follow. Among the lactating mothers who followed the food fads, 35.93 per cent showed willingness to follow the food fallacies for health of the infant and 24.21 per cent followed for health of the mother. The other reasons (Table 7.5) mentioned were, to avoid stomach ailments of the infant (9.37%), fear that the infant's growth won't be proper (3.9%), elderly advice (12.5%), to avoid cold and cough (4.68%), to avoid complications of caesarian delivery (3.12%) and as a tradition (6.25%).

Table 7.5: Reasons for following the food fads, fallacies and myths during lactation

Reasons	Total (%)
For health of the infant	46 (35.93)
To avoid stomach ailments of the infant	12 (9.37)
Tradition	8 (6.25)
Elderly advice	16 (12.5)
For health of the mother	31 (24.21)
Fear that the growth of the infant will not be proper	5 (3.9)
To avoid cold and cough	6 (4.68)
To avoid complications of caesarian delivery	4 (3.12)
Total (%)	128 (100)

Among all the respondents who did not follow the food fads during lactation period, 86.36 per cent lactating mothers feels that the food fads and fallacies are unscientific and remaining 13.64 per cent could not resist the temptation for sour foods and so did not follow the food fads and fallacies.

Belief of hot and cold foods during pregnancy and lactation

The hot and cold food concept is a traditional belief in choosing foods which is still prevalent with a large majority of the population who are illiterate or ignorant regarding the nutritive value of foods. These beliefs influence profoundly the pattern of food eaten. Some foods are considered as hot, that is, they are believed to produce heat and cause boils in the body. Meat, eggs, legumes, nuts and oilseeds are considered to be "hot" foods. Reversely, "cold" foods are believed to lower the heat production and lead to the development of cold, sore throat, etc. Fruits, vegetables and milk are thought to be cold foods. So, the perception regarding hot and cold foods was asked to all the respondents of the study. Of the total population, 68 per cent mentioned that have the belief regarding hot and cold foods and 32 per cent did not have any belief (Table 7.6). Among tribal and non-tribal groups, the perception regarding hot and cold foods during pregnancy was observed more in tribal (77.19%) than the non-tribal (62.36%) pregnant mothers.

Table 7.6: Belief of hot and cold foods during pregnancy

Perception	Tribal (%)	Non-tribal (%)	Total (%)
Yes	44 (77.19)	58 (62.36)	102 (68)
No	13 (22.80)	35 (37.64)	48 (32)
Total (%)	57 (100)	93 (100)	150 (100)

Table 7.7 & 7.8 shows the list of hot and cold foods excluded during pregnancy. Lentil, chilli, egg, spices and jackfruit were mentioned as hot foods which were excluded by one-fourth of the pregnant mothers as they believed that these foods induce abortion, vomiting and giddiness. Meat and pumpkin were avoided by 57.02 per cent of pregnant mothers as it induces gas and flatulence. Pool R (1987) in a study of hot and cold foods in Bharuch district of Gujarat mentioned that most pulses, egg, meat, spices, onion, garlic were considered as hot foods by pregnant mothers as it manifested abortion, stillbirth, rashes and red spots on skin of the baby. In another study by Jeffery *et. al* (1989) on labour pain and labour power among Indian women concluded that meat, egg, fish, pulses, garlic, onion, tea, hot milk, most spices, most nuts, etc. were avoided during pregnancy.

Table 7.7: List of hot foods excluded during pregnancy (n=150)

Hot Foods	Total (%)
Lentil (Masoor dal)	23 (19)
Meat	69 (57.02)
Chilli	33 (27.27)
Egg	25 (20.66)
Spices (Ginger & Garlic)	32 (26.45)
Jackfruit	29 (23.97)
Pumpkin	69 (57.02)

Table 7.8: List of cold foods excluded during pregnancy (n=150)

Cold Food	Total (%)
Black gram dal	17 (14.04)
Bottle gourd	49 (40.49)
Cucumber	44 (36.36)
Curd	50 (41.32)
Ridge Gourd	20 (16.52)

The informants reported that these were hot foods which induces abortion, uterine contractions and causes flatulence. Similarly, cold foods such as black gram dal, bottle gourd, cucumber, curd and ridge gourd were excluded during pregnancy as it is believed that cold foods causes indigestion and pain during labour (Table 7.8). In a study conducted by SRRT, 1992 on 33 pregnant women in Rural area of Western India found that pregnant women avoided yoghurt, milk, banana, buttermilk, etc. for fear of labour pain during delivery.

The perception of hot and cold foods given in Table 7.9 during lactating period. Of the total population, 89.33 per cent mentioned that have belief regarding hot and cold foods and 10.67 per cent did not have any belief. The perception regarding hot and cold foods among tribal (87.71%) and non-tribal (90.32%) lactating mothers were found almost similar.

Table 7.9: Perception of hot and cold foods during lactation

Perception	Tribal (%)	Non-tribal (%)	Total (%)
Yes	50 (87.71)	84 (90.32)	134 (89.33)
No	7 (12.28)	9 (9.68)	16 (10.67)
Total (%)	57 (100)	93 (100)	150 (100)

Table 7.10 & 7.11 shows the list of hot and cold foods excluded during lactating period. Meat and pumpkin (Table 7.10) were avoided during lactation period by mothers for fear that the new born will get blisters being hot foods. Sharma et. al. (2003) in a study of infant feeding practices of Himachal Pradesh mentioned that nursing mothers are not given vegetables like potato, cauliflower, radish due to the belief that these vegetables are difficult to digest. Others vegetables like spinach, brinjal and pumpkin were avoided because of traditional belief. Cold foods (Table 7.11) such as bottle gourd and curd were avoided by lactating mothers as they believe that if they consume these foods which are considered as cold food, the new born

Table 7.10: List of hot foods excluded during lactation period (n=150)

Hot Food	Total (%)
Meat	21 (15.67)
Pumpkin	42 (31.34)

Table 7.11: List of Cold foods excluded during lactation period (n=150)

Cold Food	Total (%)
Bottle gourd	28 (20.89)
Curd	31 (23.13)

will suffer from cold and cough. Sehgal et. al. (1989) also observed that the curd was considered to be a cold food and was avoided by majority of mothers among labourers and urban mothers.

Craze for pica

Pica is a common practice of eating non-food items among pregnant women and children in many countries. It is the habit of eating mud, clay, chalk, etc. The pregnant mothers have a craze to eat the non-food items and the mothers' belief that if they have the non-food items the baby will not be normal. Table 7.12 reveals that, maximum (81.33%) of the pregnant mothers did not have the craze for pica and only 18.67 crazed for non-food items as mud vessels, mud lamp, pottaries, fishing net corks, charcoal and raw mud. The craze for pica was 21.5 per cent among non-tribal than tribal i.e. 14 per cent.

Pica	Non Tribal (%)	Tribal (%)	Total (%)
Yes	20 (21.50)	8 (14)	28 (18.67)
No	73 (78.49)	49 (86)	122 (81.33)
Total (%)	93 (100)	57 (100)	150 (100)

CHAPTER VIII

Focus Group Discussion

Chapter VIII

Focus Group Discussion

Group I: Pregnant & Lactating mother

Outcome 1: What are the food items which you take specially (other than the normal food items) during pregnancy and lactating period?

Pregnant Women

- Special food which is taken by pregnant women during pregnancy other than the normal food items were fruits, dry fruits, fish (raw & dry), egg, meat and milk. The pregnant and lactating mothers felt that inclusion of these foods will give them the strength for delivery and the baby will grow properly.

Lactating mother

- Special food (Jhaal) is given to the lactating mothers after fifth day of the birth of the baby which is prepared by mixing ingredients such as white gourd, local herbs like shunk vine (*Paederia foetida*), asiatic pennywort (*Centella asiatica*), curry leaves, etc. the important ingredient is the spices as black pepper with ginger and garlic.
- Black cumin (kaljeera) Chutney is prepared with kaljeera seeds and garlic and given to lactating mothers to get rid from the body pain after delivery and also for milk production.

Outcome 2: What are the food you usually avoid during pregnancy and child birth? What are the reasons for avoiding/adding these food items?

The foods which are avoided during pregnancy and lactation with the reasons are given below:

Table 8.1: Reasons for avoiding food items during pregnancy

Avoided food items	Reasons for avoiding
Pineapple	Fear of miscarriage
Tamarind	Fear of miscarriage
Papaya	Fear of Abortion
cold water	Fear to get fever
Khar (Alkali)	Proper brain development of foetus will not take place

Table 8.2: Reasons for avoiding food items during lactation

Avoid food items	Reasons for avoiding
Sour food	Affect in healing of internal wounds of mother after delivery
Chilli, oily and spicy food	Fear to get stomach upset
Duck meat and pumpkin	Considered as hot food and Fear to get stomach upset

Outcome 4: Any item of food which is believed to be good/ bad during pregnancy?

- Papaya, pineapple, sour foods may lead to miscarriage
- Ghee and fenugreek leaf are believed to be good for brain development of the foetus.

Outcome 5: to know do the pregnant and lactating mothers consider these believes to be true

- The respondents felt that the food restrictions or additions are helpful to them and they believe it to be true. The respondents mentioned that these are advised by elderly persons and the advice it for the better health of the mother as well as the child. They also felt that the elderly people have more knowledge and experience and the pregnant and lactating women oblige to their restrictions and rituals.
- Some pregnant mothers mentioned that if they cannot resist their temptations especially towards sour foods, they have it in small amounts without the knowledge of their mother-in-laws.

Group II: Mothers and Mother-in-laws

Outcome 1: What are the food items which you want to give specially during pregnancy and lactating period to your daughter-in-law?

- Special food items like fruits, herbs like asiatic pennywort (*Centella asiatica*), stinging cat fish (singi) local variety are advised by

- mother/mother-in-laws to their daughter/daughter-in-laws during the pregnancy period to include in their diet for healthy pregnancy
- A ritual is performed by the mother side of the pregnant lady at fifth months of pregnancy which is called panchamrit i.e. the combination food items of ghee, honey, milk, curd and sugar were given to the pregnant women to avoid pregnancy complications and to get a healthy baby.
 - Dry fish with black pepper and garlic which is also called sukoti is given after delivery to the mother to get relief from body pain.
 - Sesame Chutney is given up to five days after delivery for milk production.
 - Colocasia (*Dohi kosu/Knol kosu*) with black pepper and garlic chutney is given from five days to 15 days to the lactating mother for milk production and to get relief from body pain.
 - Local chicken is prepared with black pepper and garlic and given to the lactating mothers to get relief from body ache after delivery.
 - Special food called *Pasoti* (roasted garlic with boil food) is given to lactating mothers to get relief from body pain.

Outcome 2: What are the foods you usually tell your daughter-in-law to avoid during pregnancy and child birth? What are the reasons for avoiding/adding these food items?

- Pineapple, papaya, alkali (*khar*), sour foods as they think it will lead to miscarriage
- During lactation, sour foods are avoided up to one month of delivery as they feel it will help to heal the womb.
- Sour foods, cold foods, slippery foods are avoided by the lactating mother if the baby is suffering from cold and cough.

Outcome 3: Do your daughter-in-laws/ daughter follow these? Do you consider these believe to be true?

- The mother-in-law believes that their daughter-in-laws follow these restrictions as it is helpful for the mother as well as the child. They still belief these rituals as the mother-in-laws mentioned that they also followed these restrictions when they were pregnant and feel that for following these restrictions their children were healthy and they were able to deliver four to five children in normal delivery method.

Group III: ICDS and Health functionaries

Outcome 1: Are you aware about any special addition/ restriction of food items during pregnancy/ lactation? What are those?

- The ICDS and health functionaries feel that the people follow these additions and restriction as it is their tradition. They also mentioned the rituals followed during pregnancy as panchamrit, jeura, jhaal, etc.

Outcome 2: Are such restriction/ addition having any impact on pregnancy/ lactating mother's health?

- The functionaries felt that certain foods like pineapple, tamarind, alkali (*khar*) if taken in excess amount may lead to some complications like miscarriage.

Outcome 3: Do you think AWWs can influence people in following appropriate dietary habits during pregnancy/ lactation?

- The AWWs mentioned that they counsel the pregnant and lactating mothers about proper dietary care. They also mentioned that they convince the mothers to include fruits, non-vegetarian foods and sprouted legumes, etc. in their regular diet.

Focus Group Discussion



FGD with Pregnant and lactating mothers



FGD with Mother-in-laws/ Mothers

FGD with ICDS and Health Functionaries



Explanation and Distribution of the Pamphlet

After the focus group discussion, a pamphlet was distributed to all pregnant and lactating mothers, mothers/mother-in-laws, health and ICDS functionaries containing information on good dietary practices during pregnancy and lactation. A detail discussion was held on the pamphlet so that behavioural change and improvement in dietary practices can be sustained in the targeted families (Annexure II & III). A video of the focus group discussion held with pregnant and lactating mothers, mothers/mother-in-laws and ICDS and Health functionaries was recorded (Videos enclosed in Annexure IV).

CHAPTER IX

Conclusion

CHAPTER IX

CONCLUSION

The health of women is a status symbol of any district, state or country. A woman is most vulnerable as she has to pass through important phases of life such as adolescence, pregnancy and lactation. During these phases, attention is required in terms of food and medical care. Adequate and nutritious food helps to retain the health of a woman as well as the child after delivery. Improper food intake during pregnancy may lead to low birth weight infant, infant mortality, maternal mortality and malnutrition. In our societies, there are many cultural norms and practices which are followed during pregnancy and lactation period. The practice of including and excluding some type of foods during pregnancy and lactation is followed from ancestral times and it is deep rooted in the societies. However, with the coming of the new generation mothers, it was seen that they followed as their elderly person's advice them. The new mothers do not want to contradict with the family. The traditional beliefs are followed with only one intension that the pregnancy will be successful and will have a healthy reproductive outcome. These beliefs may or may not conform to the modern biomedical notions about the proper types and amount of food needed by pregnant women to safeguard maternal nutrition, adequate growth of foetus and safe delivery. Many studies have shown that the food taken by a large section of pregnant women in India is deficient in caloric content, protein and other nutrient-a leading cause of maternal and child mortality. The study on food fads, fallacies and myth during pregnancy and lactation also attempted to find out the traditional beliefs and practices followed in Kamrup district of Assam.

The data collected from seven ICDS rural projects of Kamrup district comprised of both tribal and non-tribal population from Anganwadi Centers, Primary Health Centers/Community Health Centers. To get respondents from urban area, Kamrup metro Hospitals (Govt. /Private) were also selected for the study. A total of 300 women, (150 pregnant and 150 lactating) were

selected. The total respondents comprised of tribes (Garo, Karbi, Boro, Rabha, Cachari, Tiwa and tea garden) and non-tribes (Assamese, Bengali, Marwari, Bihari) belonging to general, schedule caste, schedule tribe and other backward classes but most of them were following Hinduism.

The pregnant and lactating mothers were from the age group of below 18 years to 37 years but the highest (44%) of pregnant women belong to the age group of between 18 to 22 years. Similarly, highest percentage of 45.33 per cent of lactating mother belongs to the age group of 23 to 27 years. Majority of the selected pregnant and lactating mothers studied up to tenth standard. The main occupation of the pregnant women's family was business and daily wage worker whereas maximum lactating women's family belongs to daily wage worker. Most of selected respondents adapted a joint family pattern. It was found that maximum respondents were from middle income group having a monthly income of Rs.5000 to Rs.15000.

Since in Indian context, observance of rituals and ceremonies plays an important part during pregnancy and lactation an attempt was made to gather information on the ritual performance. Maximum of the selected pregnant women perform a ritual known as panchamrit followed by other rituals as jeura, sat khuwa, phal pakkar, sat posotia, simantan, pak khuwa, sadhavokham, gopini and godvarayee. Similarly, ritual was also performed after delivery which was followed as tradition, celebrating the birth of the child, name giving ceremony and for health of the child as well as the mother. Performance of ritual during pregnancy and lactation was seen more among non tribal respondents than tribal respondents. It was observed that in both pregnancy and lactation period, income is not the deciduous factor in the performance of ritual.

During pregnancy and lactation period, it is mostly observed in our societies that some foods are either restricted or included for having a healthy new born and later for milk production. The nutritious foods like meat, fish, egg, vegetables and fruits were avoided mostly for believe that these foods are either hot or cold and also may cause abortion. The special foods included in the diet of pregnant mothers were non vegetarian items, fruits/dry fruits, milk and green leafy vegetables which were seen more

among higher income groups as well as in higher education level. Some of the fruits such as papaya, pineapple, mango and jackfruit were avoided during pregnancy for fear of miscarriage. Special foods like soisristi, jhaal, kaljeera chutney, plaintain flower and fish with herbs were included in the diet of tribal and non tribal lactating mothers. It was found that as education and income level increases inclusion of special food also increases. Some of the foodstuff like fruits, non vegetarian items, vegetables, alkali etc. were restricted in the diet of lactating mothers for fear that the new born baby may become unhealthy. Colocasia, papaya, black pepper, chicken soup, sesame, dry fish (*hindo*) and lentil was given in different ways to the lactating women to enhance the milk production. It was happy to find that consumption of homemade rice beer was seen less among both pregnant and lactating mothers.

The study reveals that more than half of the newborn were initiated breast milk within one hour of birth and were not given any kind of pre-lacteal food. Exclusive breast feeding was done by only half of the lactating mothers and complementary food was introduced after six months by one third of the selected lactating mothers. It was heartening to observe that maximum number of lactating mothers fed breast milk up to two years and above.

The sources of food fads, fallacies and myths followed among the pregnant and lactating mothers were family members, neighbours and village people. One-third of the women have a willingness to follow the food fads, fallacies and myths for health of the foetus, to avoid complications, for safe delivery and to avoid cold and cough in the new born baby. The perception of hot and cold foods is still prevalent with a large majority of the population but it was observed that very less percentage of the pregnant and lactating mothers avoided these hot and cold foods. Eating of non food items i.e. pica was seen less among pregnant women.

After completion of the field survey, a focus group discussion was conducted among pregnant and lactating mothers, mothers/mother-in-laws and health and ICDS functionaries to ascertain the prevalence of food fads and fallacies in the society. A pamphlet containing information on good

dietary practices during pregnancy and lactation was distributed so that behavioural change can be sustained among them.

CHAPTER X

Recommendation

CHAPTER X

RECOMMENDATION

From the findings of the study, the following can be recommended:-

- 1) The inclusion of special foods like milk, meat, fish, egg, fruits, etc during pregnancy and lactation period should be encouraged for the well being of the mother as well as the child.
- 2) The traditional rituals observed during pregnancy like *panchamrit*, *jeura*, *sat khuwa*, *phal pakkar*, *sat posotia*, *simantan*, *godh bhara*i, etc. were found to be very good as it was observed that in all rituals nutritious foods were included. Similarly, special foods such as *soisristi*, *jhaal*, chutney of onion seeds, fish with herbs, etc. which were provided after delivery were also found to be good. These special foods included were mostly herbs and spices which had healing properties.
- 3) The Health and ICDS functionaries should give special emphasis to educate and counsel the pregnant and lactating mother's about balanced diet and also to avoid food fads.
- 4) The performance of rituals is encouraging but the food items provided in the rituals should be incorporated on a regular basis rather than a ritualistic way.
- 5) Early initiation of breast feeding was satisfactory but introduction of complementary foods was somewhat disappointing. However, the IYCF (Infant and Young Child Feeding) practices of early initiation, introduction of complementary food was found more among tribals than non-tribals. The ICDS functionaries as well as Health functionaries such as ANM, ASHA, etc. should emphasize to counsel pregnant and lactating mothers to improve the status of IYCF practices. This will help to reduce the incidences of undernutrition among children.
- 6) The habit of smoking was present among tribals but it is happy to note that none of the tribal pregnant and lactating mother smoked

during entire period of pregnancy and lactation. Such obstinence is encouraging.

- 7) Awareness generation activities are strongly recommended to remove the unhealthy practices like introduction of pre-lacteal feed, eating of non-food items during pregnancy.
 - 8) Proper supervision and monitoring of the service delivery at AWCs under ICDS should be strengthened so that good dietary practices remains among the pregnant and lactating mothers.
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ANNEXURE - I



AN EXPLORATORY STUDY OF FOOD FADS, FALLACIES AND MYTH DURING PREGNANCY
AND LACTATION AMONG THE TRIBAL AND NON-TRIBAL POPULATION OF KAMRUP
DISTRICT, ASSAM

(INTERVIEW SCHEDULE FOR PREGNANT MOTHERS)

Sl. No.

A. BACKGROUND INFORMATION

1. **Name of the respondent** :
2. **Age of the respondent** :

Below 18 years	<input type="checkbox"/>	Between 28-32 years	<input type="checkbox"/>
Between 18-22 years	<input type="checkbox"/>	Between 33-37 years	<input type="checkbox"/>
Between 23-27 years	<input type="checkbox"/>	Between 38-42 years	<input type="checkbox"/>
3. **Educational level of the respondent**

Illiterate	<input type="checkbox"/>	Just literate	<input type="checkbox"/>
Up to Primary level	<input type="checkbox"/>	Up to V	<input type="checkbox"/>
Up to VII	<input type="checkbox"/>	VIII to X	<input type="checkbox"/>
Matriculate	<input type="checkbox"/>	Intermediate	<input type="checkbox"/>
Graduate	<input type="checkbox"/>	Post Graduate	<input type="checkbox"/>
PhD	<input type="checkbox"/>		
4. **Marital status of the respondent**

Married	<input type="checkbox"/>	Divorcee	<input type="checkbox"/>
Separated	<input type="checkbox"/>	Widow	<input type="checkbox"/>
5. **Caste:**
6. **Tribe:**
7. **Religion**

Hindu	<input type="checkbox"/>	Christian	<input type="checkbox"/>
Muslim	<input type="checkbox"/>	Buddhism	<input type="checkbox"/>

- Any other (specify)
8. **Name of the Village :**
9. **Police Station :**
10. **Block :**

B. HOUSEHOLD INFORMATION

11. Source of Income:

- Agriculture
- Government Job
- Artisan

- Business
- Company Job
- Daily wage worker

12. Family Type:

- Nuclear
- Extended

- Joint

13. Monthly income of the family:

- Less than Rs. 5000
- Rs. 15,000 and above

- Rs. 5000 – Rs. 15,000

14. Number of family members:

Sl. No	Name	Relationship with respondent	Sex	Age
1				
2				
3				
4				
5				
6				

C. FOOD FADS, FALLACIES AND MYTHS FOLLOWED DURING PREGNANCY

15. Physiological state of the woman:

Pregnant

How many months

16. **Ritual performed during pregnancy:**

No ritual performed

Between 3-6 months

Just before delivery

Within 3 months

Between 6-9 months

17. **How the ritual was performed:**

18. **What are the food items/eatables/ingredients used in performing the ritual:**

19. **What is the significance of the ingredients used in the ritual, specify:**

20. **What is the purpose of following the ritual on pregnancy:**

No reason behind

Health of the baby

Followed as tradition

For safe delivery

Health of the mother

Any other, specify

21. Is any ritual performed in next pregnancies as well?

Yes No NA

22. Any dietary restriction followed? If so, what were those?

Sl. No.	Food Stuff	During what period (Month) of pregnancy	Reasons for restriction
1			
2			
3			
4			
5			
6			

23. Consumption of food during pregnancy:

As usual More than usual
Sometimes more Whenever felt hungry

24. Special food/dish included in diet:

Yes No

25. If yes, give details

Sl.no.	Name of the foodstuff	Everyday	Sometimes	Very often	Reasons for inclusion
1					
2					
3					
4					
5					
6					
7					

23. Avoidance of any fruit during pregnancy, such as

Sl.no.	Fruit	Period of avoiding	Reasons for avoiding
1	Papaya		
2	Mango		
3	Jackfruit		
4	Pineapple		
5	Apple		
6	Banana		
7	Others (Specify)		

24. Consumed alcoholic beverages? If yes, how frequently?

- N.A. Everyday
Sometimes Occasionally

25. How alcoholic beverages are helpful:

26. Do you smoke? If yes, any reason for doing that:

D. IMPACT OF INFORMATION TECHNOLOGY

27. Sources of the food fads, fallacies and myths:

- Family members Advertisement
Newspaper Television
Any other, specify

28. Do you really want to follow the food fads, fallacies and myths during pregnancy:

- Yes No

29. If yes, state the reasons for following

Sl. No.	Reasons for following
1	
2	
3	
4	
5	

30. If no, state the reasons for not following

Sl. No.	Reasons for not following
1	
2	
3	
4	
5	

31. Do you know about hot or cold foods:

Yes No

32. If yes, list the hot and cold foods which you include/exclude during pregnancy:

Hot foods	Include Pregnancy	Exclude Pregnancy

Cold foods	Include pregnancy	Exclude Pregnancy

33. Are you having a craze for pica (eat, lick, or chew non-food items) during pregnancy:

Yes No

34. If yes, mention the items:

Sl no.	Pica items
1	
2	
3	
4	
5	

(Thanks for your participation)

Name of the Investigator:

Signature of the Investigator:



AN EXPLORATORY STUDY OF FOOD FADS, FALLACIES AND MYTH DURING PREGNANCY
AND LACTATION AMONG THE TRIBAL AND NON-TRIBAL POPULATION OF KAMRUP
DISTRICT, ASSAM

(INTERVIEW SCHEDULE FOR LACTATING MOTHERS)

Sl. No.

A. BACKGROUND INFORMATION

1. **Name of the respondent** :
2. **Age of the respondent** :
Below 18 years Between 28-32 years
Between 18-22 years Between 33-37 years
Between 23-27 years Between 38-42 years
3. **Educational level of the respondent**
Illiterate Just literate
Up to Primary level Up to V
Up to VII VIII to X
Matriculate Intermediate
Graduate Post Graduate
PhD
4. **Marital status of the respondent**
Married Divorcee
Separated Widow
5. **Caste:**
6. **Tribe:**
7. **Religion**
Hindu Christian
Muslim Buddhism

- Any other (specify)
8. **Name of the Village :**
9. **Police Station :**
10. **Block :**

B. HOUSEHOLD INFORMATION

11. **Source of Income:**
- Agriculture Business
- Government Job Company Job
- Artisan Daily wage worker
12. **Family Type:**
- Nuclear Joint
- Extended
13. **Monthly income of the family:**
- Less than Rs. 5000 Rs. 5000 - Rs. 15,000
- Rs. 15,000 and above
14. **Number of family members:**

Sl. No	Name	Relationship with respondent	Sex	Age
1				
2				
3				
4				
5				
6				

C. FOOD FADS, FALLACIES AND MYTHS FOLLOWED DURING LACTATION

15. **Physiological state of the women:**
- Lactating Age of the child
16. **Ritual performed after delivery:**
- No ritual performed Within 3 months
- Between 3-6 months Between 6-9 months
- Just after delivery

17. Reasons for following the ritual:

For health of the child

For health of the mother

To increase milk production

Any other benefit, specify

18. Consumption of food during lactation:

As usual

Less than usual

More

Whenever felt hungry

19. Special food included in diet during lactation period:

Yes

No

20. If yes, give details

Sl.no.	Name of the foodstuff	Everyday	Sometimes	Very often	Reasons for inclusion
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

21. Any dietary restriction followed during lactation? If so, what were those?

Sl. No.	Food Stuff	During what period of lactation	Reasons for restriction
1			
2			
3			
4			
5			

22. Consumed alcoholic beverages? If yes, how frequently?

- | | | | |
|-----------|--------------------------|--------------|--------------------------|
| N.A. | <input type="checkbox"/> | Everyday | <input type="checkbox"/> |
| Sometimes | <input type="checkbox"/> | Occasionally | <input type="checkbox"/> |

23. Inclusion of special item in diet for enhancement of milk production?

- | | | | |
|-----------------------|--------------------------|---------------|--------------------------|
| No special item given | <input type="checkbox"/> | Colocasia | <input type="checkbox"/> |
| Papaya | <input type="checkbox"/> | Black pepper | <input type="checkbox"/> |
| Rice Beer | <input type="checkbox"/> | Sago | <input type="checkbox"/> |
| Chicken/Pork soup | <input type="checkbox"/> | Herb, specify | <input type="text"/> |
| Any other (Specify) | <input type="text"/> | | |

24. Time of initiation of breast feeding:

- | | | | |
|--|--------------------------|----------------------------|--------------------------|
| Immediately after birth
(within ½ hour) | <input type="checkbox"/> | Within ½-1 hour of birth | <input type="checkbox"/> |
| on the 1 st day (After 1 hour) | <input type="checkbox"/> | On the 2 nd day | <input type="checkbox"/> |
| On the 3 rd day | <input type="checkbox"/> | After 3 rd day | <input type="checkbox"/> |

25. Any Pre-lacteal feed introduced:

- | | | | |
|---------------------|--------------------------|-------------|--------------------------|
| Not introduced | <input type="checkbox"/> | Plain water | <input type="checkbox"/> |
| Animal milk | <input type="checkbox"/> | Honey | <input type="checkbox"/> |
| Tinned milk | <input type="checkbox"/> | Rice beer | <input type="checkbox"/> |
| Any other (specify) | <input type="text"/> | | |

26. Exclusive breast feeding continued up to:

- | | | | |
|--------------------|--------------------------|------------------|--------------------------|
| Less than 4 months | <input type="checkbox"/> | Till 4 months | <input type="checkbox"/> |
| Till 6 months | <input type="checkbox"/> | Till 1 year | <input type="checkbox"/> |
| Till 2 years | <input type="checkbox"/> | More than 2 year | <input type="checkbox"/> |

27. Introduction of Complementary food:

- | | | | |
|--|--------------------------|--------------------------|--------------------------|
| Before 6 months
(Specify the month) | <input type="checkbox"/> | Between 6-12 months | <input type="checkbox"/> |
| After 1 year | <input type="checkbox"/> | Cannot tell specifically | <input type="checkbox"/> |

28. How long breast feeding continued along with complementary food?

- Till 6 months 6 months- 1 year
1 year - 2 years 2 years and above

D. IMPACT OF INFORMATION TECHNOLOGY

29. Sources of the food fads, fallacies and myths:

- Family members Advertisement
Newspaper Television
Any other, specify

30. Do you really want to follow the food fads, fallacies and myths during lactation:

- Yes No

31. If yes, state the reasons for following

Sl. No.	Reasons for following

32. If no, state the reasons for not following

Sl. No.	Reasons for not following

33. Do you know about hot or cold foods:

- Yes No

34. If yes, list the hot and cold foods which you include/exclude during lactation:

Hot foods	Lactation	
	Include	Exclude

Cold foods	Lactation	
	Include	Exclude

(Thanks for your participation)

Name of the Investigator:

Signature of the Investigator:

ANNEXURE - II

Focus group discussion

Focus group discussion will be conducted for:

Group I: Pregnant & Lactating mothers

Group II: Mother-in-laws/ Mothers

Group III: ICDS (CDPOs/ Supervisors/ AWWs) & Health (ANMs/ ASHA) functionaries

FGD guide for pregnant mothers/lactating mothers:

1. What are the food items which you take specially (other than the normal food items) during pregnancy and lactating period?
2. What are the food you usually avoid during pregnancy and child birth?
3. What are the reasons for avoiding/adding these food items?
4. Any item of food which is believed to be good/ bad during pregnancy?
5. Do you consider these believes to be true?

FGD guide for Mother-in-laws:

1. What are the food items which you want to give specially during pregnancy and lactating period to your daughter-in-law?
2. What are the foods you usually tell your daughter-in-law to avoid during pregnancy and child birth?
3. What are the reasons for avoiding/adding these food items?

4. Do your daughter-in-laws/ daughter follow these?

5. Do you consider these believe to be true?

FGD guide for ICDS and Health functionaries:

1. Are you aware about any special addition/ restriction of food items during pregnancy/ lactation?

2. What are those?

3. Are such restriction/ addition having any impact on pregnancy/ lactating mother's health?

4. Do you think AWWs can influence people in following appropriate dietary habits during pregnancy/ lactation?

গৰ্ভৱতী মহিলা আৰু প্ৰসূতি মাতৃৰ পৰিপুষ্টি

সজাগতাৰ আহিলা



ৰাষ্ট্ৰীয় জন সহযোগ আৰু শিশু বিকাশ সন্থা
আঞ্চলিক কেন্দ্ৰ, গুৱাহাটী
“অসমৰ কামৰূপ জিলাৰ জাতি আৰু জনজাতীয় সম্প্ৰদায়ৰ গৰ্ভৱতী
আৰু

গাৰ্ভীৰ খুৱাই থকা মাতৃৰ স্বাস্থ্যজনিত অধিকাৰ আৰু ভুল
ধান্যৰ ওপৰত এক বিশ্লেষণাত্মক গৱেষণা”

প্রসূতি মাতৃৰ যতন



মাতৃৰ লব লগা যতনসমূহ

- প্রসূতি মাতৃয়ে বিভিন্ন প্ৰকাৰৰ খাদ্য খোৱা উচিত।
- প্ৰতিদিনে ৩ বাৰ মুখ্য আহাৰ আৰু ২ বাৰ লঘু আহাৰ খোৱা উচিত কিন্তু এবাৰতে বেছিকৈ খাব নালাগে। আহাৰ কম পৰিমাণকৈ সঘনাই খোৱা উচিত।
- চিকিৎসকৰ পৰামৰ্শ মতে কিছুমান সাধাৰণ শাৰীৰিক ব্যায়াম কৰিব পাৰে।
- জন্মৰ পিছতেই ১ ঘণ্টাৰ ভিতৰত শিশুটিক স্তন্যপান কৰাব লাগে। তাৰোপৰি শিশুটিক স্তন্যপান কৰালে মাতৃৰ ওজন নিয়ন্ত্ৰণতো সহায় কৰে।
- ব্যক্তিগত পৰিষ্কাৰ পৰিচ্ছন্নতাৰ প্ৰতি লক্ষ্য ৰখা প্ৰয়োজন।

আহাৰ

কেচুৱাক গাখীৰ খুৱাই ধকা মাতৃয়ে গৰ্ভাবস্থাৰ খোৱাতকৈ অধিক পৰিমাণৰ তলত উল্লেখ কৰা ধৰণে পুষ্টিকৰ খাদ্য খোৱা উচিত—

- শ্বেতসৰ জাতীয় খাদ্য : ভাত, কাটি, মুৰি, চিৰা, আটা, ইত্যাদি।
- মাহজাতীয় খাদ্য : সকলো ধৰণৰ দাইল, মটৰ, বিন, গজালি ওলোৱা বুট, মগু, চয়াকিন ইত্যাদি।
- শাক-পাচলি : পালেং শাক, চজিনা পাত, ৰঙা মৰিচা শাক, নৰসিংহ ইত্যাদি।
- অন্যান্য পাচলি : কোমোৰা, জাতিলাও, অমিতা, ৰঙা লাও, তিয়হ, বেঙেনা, ভেণ্ডি, জিকা, ইত্যাদি।
- শিপা জাতীয় খাদ্য : আলু, মুলা, গাজৰ, কচু, ইত্যাদি।
- গাখীৰ আৰু গাখীৰৰ পৰা তৈয়াৰী খাদ্য : সৈ, পনীৰ, ইত্যাদি।
- বাদাম আৰু তৈলবীজ : ছিউ, মাখন, তেল, বাদাম, ইত্যাদি।
- প্ৰাণীজ খাদ্য : মাছ, মাংস, কণী।
- প্ৰতিদিনে অন্তত ১ এটা বতৰৰ ফল যেনে : আম, মধুৰিআম, কল, কমলা, আমলখি, ইত্যাদি।
- যথেষ্ট পৰিমাণৰ পানী খোৱা উচিত। প্ৰতিদিনে কমেও ১০-১২ গিলাচ পানী খাব লাগে।

