The role of food during pregnancy, lactation and childhood illness at the Okhaldhunga District Hospital, Nepal

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List of abbreviations

UNICEF	United Nations' Children's Fund
WHO	World Health Organisation
NRC	Nutrition Rehabilitation Centre
ORS	Oral Rehydration Solution
OPD	Outpatient Department

Abstract

Beliefs concerning food selection, distribution and consumption are found in all human societies. This study explores dietary proscriptions and prescriptions during pregnancy, lactation and common childhood diseases among the patients of the Okhaldhunga District Hospital: The hospital is located in a rural and remote area in the northeast part of Nepal. In the Okhaldhunga, the majority of the population is involved in subsistence agriculture, the health care services are not widely available and micronutrient malnutrition is prevalent especially among children and women in the reproductive age. Daily, the hospital staff experience that patients seek advice on what they should preferentially eat and avoid in the various cases of illnesses, during pregnancy and breastfeeding. Knowledge on local food practices and beliefs is important to enable hospital staff to facilitate practices that are beneficial to health and discourage harmful habits and unnecessary food restrictions, which may lead to nutritional deficiencies.

This study is based on a qualitative research method, using a semi-structured interview guide. Twenty individual interviews and three focus groups were conducted in the spring of 2011. The sample consisted of parents of children admitted to the hospital and pregnant women staying in a waiting home before delivery.

The findings reveal individual variations in the role of food. However, there are certain shared principles that serve to generate the various dietary beliefs and practices. Foods and fluids are prescribed as being strengthening or weakening to health in terms of its qualities such as pungency (hot and spicy), possessing strong tastes (bitter and sour), being wet or dry, easy to digest (light and soft) or difficult to digest (heavy), clean or unclean (*basi*) and "hot" and "cold". The hot-cold classification refers to the ajurvedic tradition found among the Hindus in Nepal, assigning food, bodily states and diseases into the two abstract categories of hot and cold. Diarrhoea, fever, pregnancy and abortions are considered hot states. In these cases, hot food, such as potatoes, meat and oil, should be avoided and cold food, such as most fruits and vegetables, should preferentially be eaten. Respiratory diseases are on the other hand considered cold diseases, caused by environmental cold and cold food and fluids, and thus treated by hot food. If everything is eaten during illnesses, many people believe they will have chronic bad health or that the illness will be exaggerated. This might be one of the explanations why food restrictions appear to be a common practice in the Okhaldhunga area.

Introduction

Background of the study

As a medical student I spent six weeks of voluntary internship at the Okhaldhunga District Hospital in rural Nepal. Before my arrival to the hospital, I corresponded with Dr. Erik Bøhler, the Medical Coordinator of the hospital. According to him, food restriction is widespread during illness among the local population, and the practice might cause patients to lack vital nutritional substances. Daily the hospital staff is asked by the patients what they should eat or drink, and what food items they should abstain from during illness. Dr. Bøhler expressed the need to investigate the local food taboos in order to get a deeper understanding of this practice, and to meet the issue in optimal ways. I decided to explore the beliefs and practice concerning maternal restriction of diet during pregnancy and breastfeeding and for children affected by common childhood illnesses at the Ohkahdhunga Hospital as my student thesis. These groups are studied because they are particularly vulnerable to malnutrition in Nepal.

Before I present the specific aims of the study and the local conditions in which the study took place, I will give some background information of Nepal and the health status of the country. Moreover, the nature of food taboos and the ajurvedic tradition of health and dietary practice will be explained, as this is an important framework in order to assess the food restrictions in the Okhaldhunga region.

Nepal

Nepal is a democratic republic located in the Himalayas, bordering to China and India.[1] It is one of the poorest and least developed countries in the world, and ranks 157th out of 187 countries on the Human Development Index. One-quarter of its population lives below the international poverty line of less than 1,25 US Dollars per day.[2]

The population numbers approximately 27 million people, and have a growth rate of 1.8 %.[3] One third of the population is below 15 years. [4] Less than 20 per cent lives in urban

[1] Utenriksdepartementet – Nepal (12.07.13) http://landsider.no/land/nepal/
[2] World Bank – Nepal (21.04.13) http://www.worldbank.org/en/country/nepal/overview
[3] The World Factbook (20.04.13) https://www.cia.gov/library/publications/the-world-factbook/geos/np.html
[4] WHO – Nepal (20.04.13) http://www.who.int/countries/npl/en/

areas. Agriculture provides living for the majority of the population.[5] Mountains covers two thirds of the country and makes the infrastructure challenging. The agriculture in the mountain areas is seasonal and labour intense, and thus many people are notoriously food insecure. Often stockpiles barely last through the winter months. The mountains isolate many of the poorest people, who struggle to feed themselves and to ensure that they have clean water, adequate sanitation and healthcare.[6]

Nepal has a great diversity of religious groups, where Hindus and Buddhists make the majority. Traditionally people were placed into a hierarchical system of castes. The system was officially abolished in 1963, but in rural areas the system still remains deeply entrenched. Victims of caste-based discrimination are mostly landless and are poorer than other Nepalese people. The illiteracy levels are high, with only 69 % of the men and 42 % of the women being able to read and write. [7]

The life expectancy at birth is 67 years for men and 69 years for women.[8] In comparison, the life expectancy in Norway is over 80 years. The fertility rate is fairly high, with 2.7 children per women. It is difficult to recruit doctors to work in remote areas and in these areas the access of health-care services is sparse. The immunisation coverage has increased in recent years, and is presently above 90 per cent coverage for most of the important vaccines.[9]

Maternal health in Nepal

Women are particularly vulnerable to nutritional deficiencies because of the increased metabolic demands imposed by pregnancy and during breastfeeding. Maternal under-nutrition may predispose a mother to poor health, including infections, pre-eclampsia and eclampsia, in addition to adverse pregnancy outcomes, such as low birth weight and preterm birth.[10]The birth weight is a strong indicator of early childhood survival.[11]

Iron deficiency is the most common form of malnutrition worldwide. Causes of iron deficiency are inadequate dietary iron intake, physiologic demands of pregnancy and

[5] The World Factbook (20.04.13) https://www.cia.gov/library/publications/the-world-factbook/geos/np.html
[6] UNICEF – Nepal (21.04.13) http://www.unicef.org/infobycountry/nepal_67166.html
[7] Utenriksdepartementet – Nepal (21.04.13) http://www.landsider.no/land/nepal/generell/
[8] WHO – Nepal (20.04.13) http://www.who.int/countries/npl/en/
[9] UNICEF – Nepal – Statistics (14.07.13) http://www.unicef.org/infobycountry/nepal_nepal_statistics.html
[10] Jiang T, et.al. J Nutr. 2005. "Micronutrtient Diseases in Early Pregnancy Are Common, Concurrent and Vary by Season among Rural Nepali Pregnant Women", May; 135(5):1106-12.
[11] Katz J, et.al. J Nutr. May 2006. "Treatement Effects of Maternal Micronutritient Supplementation Vary by Perccentiles of Birth Weight Distribution in Rurual Nepal". Vol. 136, no. 5, 1389-1394.

rapid growth, in addition to iron losses due to parasitic infections.[12] When iron deficiency is sufficiently severe, the red blood cell synthesis become impaired, and anaemia results. Severe anaemia during pregnancy is associated with a woman's increased risk of death. A study done on pregnant woman in Kathmandu showed that that severe anaemia, particularly in the first trimester, was significantly associated with low birth weight, preterm delivery, low Apgar score and perinatal death.[13] Low maternal age, height or body mass index also increased the risk of low birth weight. One tenth of the Nepalese pregnant women included in that study were severely anaemic, whereas two thirds were moderately anaemic.

According to Bondevik et al micronutrients deficiencies is common among woman in early pregnancy in rural Nepal, including 7 % deficient of vitamin A, 25 % lacked vitamin E and 14 % lacked vitamin D. Over one third were deficient in riboflavin and vitamin B-6, and one third lacked vitamin B-12. In addition, 12 % of the women were folate deficient and 61 % had zinc deficiency. Multiple micronutrient deficiencies were common among pregnant women. [14]

Children's health in Nepal

The child mortality in Nepal is high. Even though the rate has been declining during the past years, 50 out of 1000 children die before reaching 5 years.[15] Pneumonia, diarrhoea, injuries and congenital malformations are the main causes of death, in addition to birth complications such as prematurity, asphyxia and neonatal sepsis.[16] According to UNICEF, malnutrition is the underlying cause for more than 60 % of these deaths. [17]

As stated above, malnutrition contributes substantially to childhood death and disease in Nepal. Chronic mild and moderate malnutrition result in growth restriction, and consequently stunting. Half of the children under 5 years of age are stunted (low height-for-age). Acute malnutrition has the characteristics of wasting (low weight-for-height), representing 15 % of the children below 5 years in Nepal.[18]

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[12] Dreyfuss, M, et. al. J Nutr. Feb 2000. "Hookworms, Malaria and Vitamin A Deficiency Contribute to Anemia and Iron Deficiency among Pregnant Women in the Plains of Nepal".
[13] Bondevik G, et.al. Acta Obstet Gyncol Scand. 2001. "Maternal hematological status and risk of low birth weight and preterm delivery in Nepal" 80: 402-408.
[14] Jiang T, et.al. J Nutr. 2005. "Micronutrtient Diseases in Early Pregnancy Are Common, Concurrent and Vary by Season among Rural Nepali Pregnant Women", May;135(5):1106-12.
[15] WHO – Nepal (20.04.13) http://www.who.int/countries/npl/en/
[16] WHO – Nepal (20.04.13) http://www.who.int/gho/countries/npl.pdf
[17] UNICEF – Nepal (21.04.13) http://www.unicef.org/infobycountry/nepal_nepal_background.html
[18] World Bank – Neapl (21.04.13) http://search.worldbank.org/all?qterm=nepal.

The synergic effect between malnutrition and infections is well known. Malnutrition causes mucosal damage and impairs immunity, and thus increases susceptibility, duration and severity of infectious diseases. Malnutrition is furthermore associated with diminished response to vaccines.[19] Moreover, disease consumes energy, and a low intake of food during illness will give caloric deprivation that further compromises the nutritional status of the child. The child can suffer from severe malnutrition with repeated illnesses, leading to a vicious circle of malnutrition and infection. [20]

Lack of micronutrients, such as iron, vitamin A, zinc and iodine, has grave consequences. Iron and zinc are critical for brain development. [21] A recent study on Nepali children show that iron-deficient children score lower on motor developmental tests and has less locomotive activity. The same study showed that anaemia was associated with an older age at first walking.

Food taboos

Taboos represent "unwritten social rules that regulate human behaviour" [22]. Generally speaking, a taboo prohibits someone from doing something that is proscribed by society as improper or unacceptable. Often, the prohibition concerns something that is considered sacred or unclean, and thus not for general use.[23]

Beliefs concerning food selection, preparation, allocation and consumption exist in one form or another in virtually all human societies. There are various reasons for and effects of food taboos. In many cultures, dietary rules and consumption have spiritual, magic and religious origin. The prohibition of certain food items are in other cases founded on ecological reasons, leading to protection of a specific resource, or to monopolize a resource to a specific group in society. Some food taboos have been established to protect personal health, prohibiting certain food items because they are thought to make a person sick.[24]

[19] Psaki, S. et.al. Popul Health Metr. 2012; 10: 24. "Household food and child malnutrition: results from the eight-country MAL-ED study". doi: 10.1186/1478-7954-10-24
[20] Benakappa AD, Shivamurth P. Indian J Community Med. 2012 Jan;37(1):20-4. doi: 10.4103/0970-0218.94016. "Beliefs regarding diet during childhood illness". Department of Pediatrics, Vani Vilas Hospital, Bangalore Medical College and Research Institute, Karnataka, India.
[21] Katz J, et.al. J Nutr. 2010 Jul;140(7):1317-21. doi: 10.3945/jn.109.119925.
[22] Mayer-Rochow, V. B. Journal of Ethnobilolgy and Etnomedicine. 2009; 5:18. "Food taboos: their origin and purposes". doi: 10.1186/1746-4269-5-18.
[23] The free dictionary by Farlex. 4.09.13. http://www.thefreedictionary.com/taboo.
[24] Mayer-Rochow, V. B. Journal of Ethnobilolgy and Etnomedicine. 2009; 5:18. "Food taboos: their origin and purposes". doi: 10.1186/1746-4269-5-18.

The spiritual origin of food taboos may be illustrated by the ancient Hindu script "Bhagavad Gita": "Foods in the mode of goodness increase the duration of life, purify one's existence and gives strength, health, happiness and satisfaction. Such nourishing foods are sweet, juicy, fattening, and palatable. Foods that are too bitter, too sour, salty and pungent, dry and hot, are liked by the people in the modes of passion. Such foods cause pain, distress and disease. Food cooked more than three hours before being eaten, which is tasteless, stale, putrid, decomposed and unclean, is food liked by the people in the modest of ignorance." [25] This text illustrates that food is not merely valued in terms of its taste and nutritional qualities, but rather that the preference and consumption of certain food items is one of the factors which define groups of people. Interestingly, no precise dietary instructions are given in the text, and the final choice is left to the individual.

Dietary rules and consumption may concern particular phases of human life cycle and may be associated with special events, such as weddings, funerals, hunting, menarche, pregnancy, birth and lactation. Food taboos are often distributed unevenly within a specific group. Frequently, it affects specific members of society, such as males or females, leaders, children, widows or widowers. In some cases the food taboos are imposed on the individuals by outsiders, or by members of a group to manifest themselves, thus working as a strong factor in group-cohesion and group-identity.[26]

Hot and cold classification system

Persons of Asian descent traditionally subscribe to the ayurvedic tradition, perceiving health in connection with the bodily balance of "hot" and "cold". [27] In Nepal this refers particularly to people of Hindu origin. In this system, foods, bodily states and diseases are assigned into the two opposing or complementary categories hot and cold.

Almost all foods can be assigned hot (*garmi*), cold (*sardi*) or neutral. Firstly, hot and cold may refer to temperature. Secondly, they may refer to pungency (highly spiced foods). Thirdly, they may refer to intrinsic and abstract qualities that usually bear no relation to either pungency or temperature. For example, in this sense papayas are hot and bananas

[25] Mayer-Rochow, V. B. Journal of Ethnobilolgy and Etnomedicine. 2009; 5:18. "Food taboos: their origin and purposes". doi: 10.1186/1746-4269-5-18.
[26] Ibid.
[27] Ibid.

are cold. The different food items in each category do not seem to possess any common characteristic such as colour, texture or form. Generally, most vegetables and fruits are seen as cold. Rice, wheat, and in most cases milk are also considered of cold valence. Spices, eggs, meat and alcohol are in general referred to as hot.[28] However, one has to keep in mind that there are wide local variations in the hot-cold classifications of foods.

Excess heat or cold in the body is believed to cause illness. The treatment of a hot disease is avoidance of hot influence, including temperature heat from the environment, constitutional heat and hot food. A person with a hot constitution is believed to have a hotter bodily make-up, and is thus believed to be more prone to hot diseases than a person with a cold constitution, and vice versa. Pool summarises hot and cold diseases in this way: "Hot diseases are generally seen as being caused by hot food which enters the body and causes a built-up of excessive heat which then moves in an outward direction, flowing out of the body in the form of a liquid or passing directly through the skin causing spots, ulcers, etc. in the surface. Cold diseases are less often seen as being caused by food and are usually caused by cold in the environment entering the body and producing congestion deep in its interior." [29]

Aims of the study

My present study was situated in the Okhaldhunga region, northeast in Nepal. The objective was to explore the role of food during for women and children in Nepal. The specific aims were to investigate believes and practice of food prescription and proscription during pregnancy and lactation and for children during common diseases. My hypothesis was that traditional beliefs and practices concerning food avoidance exists among people in the Okhaldhunga region and has an impact on food allocation during pregnancy, lactation and childhood illness. The role of foods vary greatly in different cultural contexts. Knowledge on local food restrictions is important to facilitate practices that are beneficial to health and discourage harmful habits.

Below is a presentation of the Okhaldhunga region and the hospital where the study took place. Some background information on local food practice will also be given.

[28] Pool R, Soc. Sci. Med. 1987; 25:4. "Hot and cold as an explanatory modell: the example of of Bharuch District in Gujart, India" 0277-9536/87
[29] Ibid.

Following, the methods of the thesis will be assessed, before I proceed to the findings and discussion of this study.

Okhaldhunga District

Okhaldhunga District Hospital

Okhaldhunga District Hospital is situated in a rural and remote area in the northeast part of Nepal. The hospital was founded in 1962 and is run by the Non-Governmental Organisation "United Mission to Nepal". The hospital is an important health facility in Okhaldhunga district. In addition, it serves people in four surrounding districts, accounting for a population of more than 250,000 people. "In comparison to other areas of Nepal, Okhaldhunga district is severely impoverished. A recent study by the community health team, found that less than 3% of all people in this district have any extra resources left after meeting the basic needs of feeding their family."[30]

It takes half an hour by plane from Kathmandu to Rumjatar, followed by a 2-4 hours walk from the airport to reach the hospital. In 2008 Okhaldhunga was connected to Kathmandu by road, but the quality of the road is still very poor and the access of vehicles limited. The patients may have to walk or be carried for hours, even days, to the hospital.

The hospital has 32 registered beds and a separate division for patients with tuberculosis. In addition, there is an Outpatient Department (OPD), a delivery room, a minor and a major operation theatre. The facilities include conventional x-ray, ultrasound and a biochemical laboratory. There are between 1 and 4 doctors, and the hospital employs about 50-60 people. Approximately 2500 patients are admitted to the hospital every year, and the hospital treats about 30,000 outpatients.[31]

At the hospital area there is a Nutrition Rehabilitation Centre (NRC) where children suffering from malnutrition are admitted often after an acute infection has been treated at the hospital. Here the parents are educated in nutrition, childcare and family planning by the hospital staff. The NRC also serves as a waiting home for women with risk

[30] Tansen Hospital – Okhaldhunga Hospital (3.07.12) http://www.tansenhospital.org.np/okhal.html.
[31] Ibid.

pregnancies and for those who live fare from the hospital. These women also take part in the education.

Okhaldhunga District Hospital

Food

In rural Nepal, nutrition is based on the staple foods grown in the region, with supplements of vegetables and fruits in the season. The majority of the Nepalese families eat *dal bhat* for most of the meals. *Dhal* is a lentil soup, served with *bhat* (boiled rice) and *tarkari* (curried vegetables). Staple food in the Okhaldhunga region includes rice, wheat and corn. Important vegetables, legumes and fruits are dark green leaves, potatoes, peas, soya beans, lentils, papaya, bananas and oranges. These are valuable as they contain a lot of vital vitamins and minerals. For example, green leaves (*sag*) are important sources of vitamin K and iron. Milk of cow and buffalo and other diary products, such as *gee* (clarified butter) are also consumed, but often not on regular basis. The most common animal sources are goat and chicken, however many cannot

afford to eat meat. Access to micronutrient-rich foods on a regular basis is a distant reality for many families, and many survive on staple food alone.

Dahl bath with sag (dark green leaves)

The majority of the families still produce most of the food on their own land. In addition, supplementary food is purchased and sold at the marked in the Okhaldhunga village. Food availability vary greatly with season, with the post-monsoon months (October-December) being the period of greatest abundance and the monsoon months (July-September) being the period of greatest scarcity. In the recent years has products grown in the lowland, such as fruits, been more accessible due to the road to the Kathmandu Valley. Moreover, the road has made industrial products easily available. Products such as noodles, crackers and sweets are sold in local shops and consumed by many. However, the roads are often in a poor condition after the monsoon season, and the lorries with goods might not always reach the Okhaldhunga region.

Some knowledge on local food taboos exists prior to this study. In 1984, the nutritionals Nalini Shalya studied hot-cold food in the Okhaldhunga region.[32] The study is not published, however it is valuable as it gives ideas about the local classification of food. According to Shalya, most vegetables are regarded as cold, consistent with the general principles of ajurvedic food categories. Likewise, black dhal, bananas, sheep, cow's milk,

[32] "Hot-Cold Food and Medical Categories" Shalya, Nalini. 1984. Revised 1.11.90. UMN Health Service Office. (Not published).

salt and sugar are assessed as cold. Food items of hot valence are chicken, goat, *gee* (clarified butter), oil, chilli peppers and eggs, as often seen in ajurvedic medicine. However, some food items, which often are considered cold, such as rice, wheat, dry leaves and buffalo milk, are believed to be hot according to Shalya. This illustrate that general food classifications must be treated with care, and that feeding taboos only are consistent within a limited geographical area, it they are consistent at all.

Method

To explore the belief and practice of food restriction in depth understanding of the human behaviour is needed. To assess this topic, I used a qualitative research approach. The study is based on twenty semi-structured interviews and three focus groups. The data sampling is done over a period of five weeks, in March and April 2011. A local interpreter was used to conduct all the interviews. Concerning the individual interviews, the majority of the respondents were women staying at the NRC or parents of children admitted to the hospital, mostly women. In a few occasions grandparents and mothers of women staying at the NRC were interviewed.

The focus groups consisted of two or three pregnant women straying at the NRC before delivery. On these occasions, the researcher and the interpreter tried to facilitate a discussion between the individuals. Because of the constant need of interpretation the focus groups worked more as regular interviews. However, it turned out to be valuable information, as the individuals were able to comment on each other's attitude and practice concerning food restriction.

The sampling was based on convenience in the sense that most of the parents of sick children admitted to the hospital and women staying at the NRC during my stay in Okhaldhunga were asked to take part in the study. However, on a few occasions, I also recruited parents from the out-patient clinic. The criteria for the recruitment were that they were caretakers to children below 10 years of age or pregnant women staying at the NRC. I recruited subjects with different age, caste, education, religion and residence to as best as possible assess the various feeding taboos in this local community.

The subjects received information in Nepali about the study (see appendix) and signed a letter consenting to participate in the study (see appendix). As many of the interviewed

where illiterate, the information were read out and explained to them by the interpreter. The interviews were conducted in the hospital area and lasted between 10 and 55 minutes. The same interpreter was used on all occasions. Only written recordings were taken during the interview.

The semi-structured interview guide was developed upon my arrival to Nepal (see appendix). The main themes were the practice and beliefs regarding the consumptions of food and fluids during childhood illness, during lactation and pregnancy. In every interview the main focus was on the situation of the individual being interviewed. For example, when interviewing a mother to a child with diarrhoea the main focus was on food restriction concerning her child. During the focus group of pregnant women I concentrated on food taboos during pregnancy. However, all issues were raised in each interview.

After three pilot-interviews the interview-guide was evaluated together with the local tutor, Dr. Bøhler, and revised to even better facilitate the local conditions. These first interviews are included in the study, as the interview guide was revised to a limited extent and because the first interviews contained valuable material to the study.

Throughout the period of data sampling I talked to some of the hospital staff in order to verify my findings. The interpreter was also important in characterizing and explaining local conditions and phenomena not immediately understood by the researcher. A couple of key informant interviews were conducted. The key informants were local nurses and the wife of a Nepalese doctor working at the hospital. In these interviews I was able to go through my findings and elaborate it's meaning and get a better understanding of the topic. At the end of my stay at Okhaldhunga District Hospital I presented my results to the hospital staff and got valuable views on my findings.

The interviews were recorded on a computer and transcribed into English on location. The analysis was done in Norway after returning from the field trip. The interviews were coded in the sense that the researcher was demarcating segments within the data. Each segment was labelled with a "code" which suggests how the associated data segments correspond to the research objectives. Examples of codes are "digestibility", "potatoes", "post-partum" and "fever". Often, a specific segment was labelled with more than one code. The coded segments formed the basis of the exploration and analysis that is presented below.

Discussion of method

The Nepali food culture and practise, as well as the insight to the different food items in the specific area of Nepal, was not known by the researcher before the data sampling. The way in which the themes of the interview were approached may not have been appropriate in the culture of the participants. This might lead to misunderstandings, and useful knowledge might have been lost. To compensate for the lack of prior knowledge, the researcher corresponded with the local doctor, Dr Bøhler, before arrival. The continuing use of key informants during data collection, as described earlier, also counters this weakness of the study. Especially, one key informant working at the health posts in the district turned out to be an important source of information. She could confirm many of my findings, as well as facilitated the researchers' understanding of the various food beliefs and practices.

Parents of children admitted to the hospital and women at the NRC were included in the study. One may assume that these groups have been educated at the local health post and at the hospital. Especially the women staying at the NRC received education on nutrition and health care. One may assume that the risk of "eager to please" bias is especially high among these groups. They might report what they have learned by the health personnel, rather than telling about their actual practice. Thus, useful knowledge on food restriction might be lost by only including these groups. It would have been interesting to recruit parents to children not needing hospital treatment, for example recruited at the local health post or other institutions in the local community.

Sometimes the patients gave short answers without being able to elaborate or explain their practice of food consumption. The subjects might take it for granted that some food-items were restricted or added when a child is sick, and thus not reporting it. This is enhanced by the cultural difference between the researcher and the research population. To counter this I used an interview technique by asking about the same topic in different ways. Moreover, I constantly encouraged the interpreter to give me feedback on the cultural relevance of my approach, as well as the use of key informants.

A strength in this study was that the same interviewer and interpreter where used on all occasions. However, the interviewing style and the social qualities of the interpreter and the interviewer might influence the flow of information. The ones being interviewed might have felt intimidated by the Western researcher and the male interpreter with

higher education and from a higher caste than most of the subjects. One challenge was that sometimes people gathered around us during the interview, sometimes interrupting the interview by commenting what was said. This could also have influenced the answer of the respondents.

It is difficult to make a dialogue with the subjects through an interpreter. The interviews relied on the interpreter ability to give an accurate account of what the respondents said, without filtering any information. On some occasions there were misunderstandings between the interpreter and the researcher, generating a total different meaning of the subject. For example, the interpreter used the word cold for both *sardi* (cold) and *basi* ("unclean"). However, most of these misunderstandings were discovered and corrected during the data sampling.

Findings and discussion

Pregnancy

The majority of the women interviewed told that they eat as normal during pregnancy, not adding or restricting any food items. However, the ambiguous in these statements is evident as a wide variety of nutritious foods and fluids were eaten preferentially and others were abstained from during pregnancy. Dhal bath, green leaves, fruits, milk, curd and honey were the most frequent mentioned food items to be especially good for pregnant women. High protein containing food items, such as eggs and meat, were by some also perceived to strengthen their health in this period. One pregnant woman explained that because meat was not easily accessible in her village, she would increase the amount of eggs during pregnancy.

Moreover, dietary restrictions during pregnancy seem to be evident. Three of the pregnant women participating in the study had exclusively been eating fruits and vegetables during the first 6 months of pregnancy. Nausea and vomiting was given as explanations for this food avoidance. The fruits they had been eating were mandarin, apple, banana, grapes and oranges. Regrettably, the kind of vegetables they had been eating in this context is not known. After the 6 months these women told that they would introduce other food items in their diet, i.e. like soft rice. Interestingly, one

woman told that she did not eat fruits and other "cold" food items 2-3 days before delivery.

Some of the subjects believed that chilli and sour food should be restricted during pregnancy. One pregnant woman explained that she prepared her food separately to the other family members, and thus added less chilli peppers to her food. This was because it would "affect the child", however, *how* it would affect the child could not be explained.

A few believed that women are restricted from eating certain food items as these are thought to have abortive influences. A woman with a history of multiple spontaneous abortions had been told by villagers to sustain from potatoes or bitter food throughout pregnancy as it might cause yet another abortion. According to one of the key informants, a nurse at the hospital, pumpkin and papaya are also thought to induce abortion.

Alcohol was totally abstained throughout pregnancy and breastfeeding by all but one woman interviewed. It is important to note that in Nepal, the lower castes, such as Rai, Magar, Sherpa, Newar and Dhali drink alcohol, whereas the high castes, such as Chetri and Brahmin totally abstain from alcohol. One woman from the caste Magar drank one soup bowl of homemade spirit daily, also when being pregnant. "I think it is good for the foetus to drink alcohol. I started to drink alcohol when I was a child and have been drinking it since that time. My mother drank alcohol when she was pregnant."

Discussion

Despite that the majority of the women interviewed told that they eat as normal during pregnancy, my findings demonstrates that pregnancy is a time for special food restrictions and proscriptions. This rises the question what the interviewed women mean with "eating as normal". In some cases, maybe the interviewed women told that they ate as pregnant woman usually do, assuming that the researcher is implied with what pregnant woman normally eats in this cultural setting. In other cases, it might imply that there are no specific dietary rules linked to pregnancy, but due to nausea or "cravings" some food items were respectively avoided or added. This is a question of further investigation, as my findings do not allow me to draw any firm conclusion on this subject.

A study on cultural factors in food allocation in rural Nepali households also found that meat and dairy products were considered to be especially good to eat during pregnancy.[33] The meat must be considered advantageous to the Nepalese women which are prone to iron deficiency in pregnancy.

The exclusive diet of fruits and vegetables during the first 6 months of pregnancy could be explained by merely personal favour of food due to nausea. However, most fruits and vegetables are considered cold, and could be seen in relation to the hot and cold explanatory model. Pregnancy is considered a hot state according to ajurvedic tradition. This is a period where the woman is particularly hot and vulnerable to hot diseases. Excess heat in pregnancy may lead to spontaneous abortions. This particularly applies for women with a hot bodily constitution. This means that the pregnant woman, who is already in a heated state, must try to avoid hot food, where as cold food should be consumed in a greater amount to counter the imbalance.[34] My findings is fits this model of explanation, as most vegetables and fruits, in addition to milk and curd, are all classified as cold according to Salyas study from Okhaldhunga. Spicy food, potatoes and alcohol, which are considered to be of hot valence, were considered inappropriate food items.

According to a study on hot and cold classification in India, papaya is the one exception of fruits that is considered hot, putting the abortive influence of papaya into the hot-and cold explanatory framework. One may assume that these dietary rules apply stronger to those who are in a vulnerable state. For example, if a woman has multiple abortions it will be considered the proof that she has a hot constitution, and she should avoid hot food in subsequent pregnancies.[35]

My findings are not completely consistent with the hot and cold model of explanation, as eggs, meat and honey, which should be eaten in pregnancy, are considered hot. Even though alcohol is considered a hot substance, and thus fits the model, one may assume that the main reason for avoiding alcohol in pregnancy is the experience of alcohol's toxic influence on the foetus.

[33] Gittelseon J, Soc. Sci. Med. 1997; 44:11. "Cultural factors, caloric intake and micronutririent sufficiency in rural Nepali households". 0277-9536/97
[34] Pool R, Soc. Sci. Med. 1987; 25:4. "Hot and cold as an explanatory modell: the example of of Bharuch District in Gujart, India" 0277-9536/87
[35] Ibid.

According to Pool, it is not simply a question of avoiding excess heat throughout pregnancy, but adjusting the amount of heat at the various stages of the pregnancy. Whereas heat is considered dangerous in early pregnancy, it is actually required in the third trimester. At the end of pregnancy heat is needed for delivery, so that the woman can "generate enough heat to expel the infant".[36] "Women are advised to eat hot food in order to build up the heat necessary for delivery. It is believed that cold food causes a sticky white layer of "fat" to form around the foetus causing it to get stuck in the womb. Hot food during the third trimester is seen as necessary to melt this layer, thus facilitating the delivery." [37] This could be the reason why one woman did not eat fruits or other cold food items 2-3 days before delivery. However, no other food restrictions were reported in the period just before delivery, and further investigations are needed in order to find out if this is a general food taboo in the Okhaldhunga district.

Post-partum

Newly delivered mothers should in general avoid cold water and cold food, i.e. green leaves. One woman explained that the infant would contract a cold if the mother ate cold food. Instead, the woman should consume warm and soft (easily digestible) food. One of the key informants explained that this was because it is believed that the mother's tooth are weak after delivery, and thus she should not chew. One woman explained that the food was prepared inside the house (away from the cold outside) and separately to the other family members in order to make it soft and warm.

Nutritious and strengthening food was preferentially consumed in the post-partum period. Some of the respondent told that *gee* (clarified butter) should be eaten in large amounts. This was confirmed by two of the key informants, which added that it is especially the castes Chetri and Bhramin who eat a lot of gee. Moreover, one of them told that some mix alcohol with gee to make the mother warm and relaxed. Various other food items were believed to be especially good to eat in the post-partum period, including meat, oil, eggs, milk, fish, rice, green leaves and fruits. These are food items that belong to both the hot (meat, eggs, gee, oil) and cold (fruits, green leaves, rice) classifications system.

[36] Pool R, Soc. Sci. Med. 1987; 25:4. "Hot and cold as an explanatory modell: the example of of Bharuch District in Gujart, India" 0277-9536/8
[37] Ibid.

It was interesting to find that potatoes were considered harmful in the post-partum period. One woman stated that potatoes should be avoided 22 days after delivery. Potatoes were believed to give the infant stomach pain and make it swollen. Moreover, potatoes, as well as black *dhal*, were believed to infect the operation wound if the mother needed a caesarean. This seems to be a general issues, as others believed that children should avoid potatoes, lentils and salt when having a wound or a fracture.

Discussion

It seems like the mother and the infant were believed to be vulnerable to cold in the post-partum period. The mother should eat soft, hot, nourishing and energy dense food. This seems reasonable in order to give the women the strength and energy they need in order to recover after the delivery. In general, strengthening food is usually believed to be hot because they produce energy. Similar studies from India and Nepal (Pool and Gittelson) give the same findings, explaining the preferential intake of hot food because it "stimulates the expulsion of all the dirt still in the womb." [38] Moreover, the study from Nepal found that the newly delivered mother should avoid all kinds of activities that exposed her to cold water, including doing laundry and working in the rain. [39]

However, the picture is not as clear, as food items belonging to the cold classification also were preferentially consumed just after delivery. According to Pool, in the case were the post-partum bleeding is excessive, the amount of hot food will be reduced and colder food will be eaten, as bleeding is associated with heat in the ajurvedic tradition. [40] It is not fully understood if the food preferences should be explained by the perception that nutritional, protein-rich and energy-dense food is strengthening in the post-partum periods, or be explained by the hot-cold classification system.

Breastfeeding

Every mother that was interviewed emphasized the importance of breastfeeding her infant. A couple of the women participating in the study even gave their children breast-milk up to five years of age. When the child was ill, lactation was perceived as even more vital. There were no occasions were breast-milk should be restricted.

[38] Pool R, Soc. Sci. Med. 1987; 25:4. "Hot and cold as an explanatory modell: the example of of Bharuch District in Gujart, India" 0277-9536/87
[39] Gittelseon J, Soc. Sci. Med. 1997; 44:11. "Cultural factors, caloric intake and micronutririent sufficiency in rural Nepali households". 0277-9536/97
[40] Pool R, Soc. Sci. Med. 1987; 25:4. "Hot and cold as an explanatory modell: the example of of Bharuch District in Gujart, India" 0277-9536/87

Fluids are believed to increase the milk output of the mother. The majority of the women have a higher intake of various fluids when breastfeeding, including soups of rice, lentils and green leaves. According to some should *all* food be taken as fluids. Nearly half of the mothers consumed *jwano*-soup when breast-feeding. *Jwano* (carom) is a plant that grows in the area. Its seeds are believed to increase the amount of breast milk. On the contrary, dry food like bread, beaten rice, dry leaves and dry noodles is perceived to reduce the milk production and the quality of the milk.

In general, Nepali food has strong flavours. Pungent food (hot and spicy), sour and bitter food and were often restricted in the diet of a lactating woman. For example, one mother said she would not have salt, chilli, oil and sugar for one and a half months when the child was ill. Particularly care was in general also taken to ensure that small children did not consume food with strong tastes, especially when being ill. Examples of sour food mentioned by the subjects were oranges, mandarin, pineapple, grapes and lemon. Red and green chilli peppers were most frequently avoided hot spices. Whereas only a few believed that chilli peppers should be restricted during pregnancy, the majority of the mothers restricted their intake of hot spicy food when breastfeeding. The chilli is believed to be transmitted through the breast milk and harm the infant by causing "burning of the stomach and chest". Furthermore, chilli is perceived to exaggerate illness if the child already has fever, as abundance of chilli pepper will turn the fever into pneumonia or typhoid fever.

It is believed that qualities associated with specific foods are passed on to the child through the breast milk. For example, green vegetables should be avoided because it will make the stools of the child green and cold foods and fluids are restricted, as it is believed to give the child a cold. Other examples are noodles, which are believed to go through the milk and cause jaundice, and potatoes that make the child swollen. Moreover, a woman explained that she would not eat meat of chicken and goat because of the high fat content that would lead to indigestion to her child.

When a child is ill and in a vulnerable state, it is even more important that the dietary restrictions followed by the mother. In most cases, the breast-feeding mothers should avoid the same types of food as the child when it is ill. Findings concerning this issue will be presented in relation to the childhood diseases below.

Discussion

The findings reveal various food restrictions that have to be followed by the lactation mother. It is evident that breast-milk is not breast-milk per se. It seems like the diet of the breastfeeding mother determines, or at least affects the quality of the breast-milk, both in good and bad terms. However, it was interesting to find that even though the milk was not perceived to have the right quality due to inappropriate diet of the mother, the child should always be breastfeed. This demonstrates that breast-milk is perceived as vital in infanthood.

According to a study on food taboos in Nepali households, the primary proscription when the mother is breastfeeding a sick child appears to be avoidance of certain foods so that qualities of "coldness" and "indigestion" will not be passed along. [41] My findings reveal the same ideas, as cold foods are avoided as it gives the child a cold and fat food leads to indigestion. This will be further discussed in the section of childhood diseases below.

Respiratory disease and fever

Respiratory symptoms and diseases, including colds, coughs, asthma and bronco-pneumonia, are believed to be cold diseases caused by cold influence. It was a general agreement that the child should be kept away from cold temperature in the environment, and cold water was prohibited to drink. To some of the respondents, this also applied to the breastfeeding mother if the child had a cold. During respiratory disease, the child should be kept in a warm place, eat soft warm rice and drink warm fluids, such as warm water, rice-soup and tea. The majority of the subjects avoided cold foods, like fruits and green leaves. However, there were some disagreements on this, as a few mothers preferentially gave the child green leaves when the child had a cough. Sugar was believed by a couple of the subjects to cause respiratory infections and cough. Sugar appeared to be a food taboo in other occasions of childhood disease. For example, a few restricted sugar when the child had intestinal worms as "sugar makes the worms grow".

Not surprisingly, fever was perceived as being caused by excess heat in the body. In contrast to respiratory diseases, the child should avoid hot rice and tea when having a

[41] Gittelseon J, Soc. Sci. Med. 1997; 44:11. "Cultural factors, caloric intake and micronutririent sufficiency in rural Nepali households". 0277-9536/97

fever. Moreover, potatoes, meat, cow and buffalo milk should be avoided. It seems to be a general believe that consumption of inappropriate food, either by the child or the lactating mother, may lead to exacerbation of illness. This is evident in the case of fever. The example of chilli peppers turning a fever to pneumonia or typhoid fever is already mentioned under the chapter of breastfeeding. Moreover, buffalo milk, which is hot, is believed by a few to cause typhoid fever when the child has fever. Likewise, some advice the mother to avoid meat as it causes pneumonia when the child has fever.

Discussion

It seems reasonable that respiratory diseases are believed to be cold diseases, as these are diseases that are highly prevalent in the colder season. My findings are consistent with Pool's findings from India, where respiratory diseases were seen as being caused by excess environmental cold, and to a lesser extent cold food and fluids. According to Pool, cold diseases usually are situated deep in the body, for example in the lungs, joints and muscles, with no signs on the outer surface. On the other hand, hot diseases are often manifested outside the body and include symptoms such as redness of the skin, swelling, diarrhoea, vomiting, bleeding, emissions of semen and abortions.[42] The signs of fever, with redness, high body temperature and sweat, fit the description of hot diseases above, and thus are treated accordingly by avoiding hot food and fluids.

Diarrhoea

Diarrhoea is one of the leading causes of infant and child mortality in the developing world. Restriction of fluids has been reported in the literature as a common taboo in India and Nepal, as it increases the amounts of liquid stools.[43] Gladly, this was not evident in the Okhaldhunga area. As previously mentioned, none were reluctant of breastfeeding a child with diarrhoea. Most parents interviewed give their children lot of fluids when the child had diarrhoea, including breast milk, water, vegetable soup and ORS (Oral Rehydration Solution). It is important to note that most of the parents knew about ORS.

Many parents are however reluctant to give the child a lot of food because it is believed to increases diarrhoea. Staple food, like potatoes, rice, and wheat were believed to

[42] Pool R, Soc. Sci. Med. 1987; 25:4. "Hot and cold as an explanatory modell: the example of of Bharuch District in Gujart, India" 0277-9536/87
[43] Stapleton, M. 1989. "Diarrhoeal disease: precetprions and pratices in Nepal" Soc Sci, Vol 28, No 6, p: 593-64, 0277-9536/89

increase diarrhoea by some of the respondents. The mother of a child hospitalized with gastroenteritis said: “My child is getting thin. If the child eats potatoes it will have diarrhoea all the time”. Vegetable curry, green leaves, oil, cow and buffalo milk should also be avoided. In addition, many restricted hot water, tea and rice-soup. Below are three possible explanations of these food taboos. Even though the explanations are presented in the context of diarrhoea, they can be seen as general principles of food classification that apply to other childhood diseases.

First, as with the respiratory diseases and fever, the food taboos in relation to diarrhoea may be explained in the hot-cold classification model. According to the majority of the respondents, diarrhoea is generally regarded as a hot disease because it occurs mostly in the warmer season. Therefore, some advises not to drink warm water, tea and rice-soup when having diarrhoea. A lot of the food items that were considered indigestible, such as wheat, potatoes and oil are also considered of hot valence. These food items could be ingested in the winter season, but should be avoided in the summer season because of the warm weather, suggesting a relation between heat and indigestibility. “When it is summer, the body gets hot, it cannot digest the oil and the child gets diarrhoea“, one woman explained.

This takes us to the second way of classifying food, which is in terms of digestibility. Heavy foods are identified as being difficult to digest, whereas light food is easy digestible. The children are thought to have weaker stomach, and when they are ill they should preferentially consume easy digestible food. This especially applies when the child vomits, has abdominal pain or diarrhoea. In general, poorly cooked food, dry food, fatty meat and oily food are considered difficult to digest. Examples of dry food are biscuits, beaten rice and uncooked noodles, and examples of oily food are various types of milk, gee, meat and oil. A correlation between the fat content of the food and its digestibility seems to be evident. As already mentioned in the section on breastfeeding, is meat of chicken, goat and buffalo milk identified as having a high fat content, thus believed to disturb the digestive system of the infant.

Potatoes are an interesting example in this context. The majority of the people in the Okhaldhunga district eat potatoes as vegetable curry together with the *dhal bath*. The *Sherpa* people, however, eat potatoes at their staple food. According to the majority of the subjects do potatoes exacerbate stomach pain and diarrhoea. Potatoes were believed to contain a lot of fat, and hence being indigestible. Some of the subject also believed

that the breast-feeding mother also should restrict potato intake when the child has diarrhoea.

Thirdly, the cause of diarrhoea might be explained in terms of "unclean" food. A few of the respondents believed that diarrhoea was caused by cold food and fluid, because "cold (*sardi*) food might also be *basi* food". The subjects characterized *basi* food as food that is cooked and kept for the next day, for example *dhal bath* that is prepared the day before. Another explanation of *basi* food is "food that has to be thrown". Food cooked in the morning and eaten in the middle of the day may also be *basi* in some occasions. For example, milk that is boiled or *Sarbotom Pito*[44] will be *basi* after 3 hours. Likewise, vegetables are *basi*, but not if they are prepared fresh (directly from the field) and eaten immediately. A few respondents told that water might be *basi* in some occasions. One woman explained: "according to the Hindu religion, if we keep the water for a night it is *basi*. However, if we keep it in a clean bottle we can drink it." Bread, biscuits and pickles are examples of food that does not turn *basi*. One of the key informants told that it vary if *basi* food is eaten in the different parts of Nepal. For example, in Terai (the low-land), where it is very hot, *basi* food is not eaten, but in Kathmandu it may be eaten.

Basi food does not seem to be the equivalent of stale food. One woman explained it in this way: "It is easy to know if the food is stale because we can feel and see it, it smells very bad. The *basi* food looks like food, but the stale food does not look like food. *Basi* food is kept for one night and the stale food is kept for more days." According to the key informant the stale food is called *sardijan* and the food prepared fresh are called *sagi.* Young children should in general avoid *basi* food. This seems to be even more important when the child was ill, especially when having abdominal pain or diarrhoea. Breastfeeding mothers also avoided *basi* food.

Discussion

The three different food classifications presented above are overlapping, as indigestible food often seems to be hot food and cold foods often seems to be *basi*. Most likely, it is the surrounding circumstances that determine the perceived cause of diarrhoea, and the disease is treated accordingly by food restrictions. Thus, knowledge on what people

[44] *Sarbotam Pito* it is a porridge eaten by many children in the Okhandhunga area. It containing soya-beans and two other cereal grains of free choice, i.e. wheat and corn, and is valuable because of the high protein-content. Miriam Krantz, an American nutritionalist working in Nepal over 30 years ago, developed the porridge. The parents staying at the NRC are educated on how to make *Sarbotam Pito*.

believe to cause diarrhoea, and illness in general, is important because this may influence the action that is taken in order to treat the disease.

Whereas environmental cold and cold water is perceived to lead to respiratory diseases, the findings suggest that main cause of diarrhoea is incorrect diet. A study on perceptions and practice of diarrhoea from Nepal identifies following dietary causes of diarrhoea; cold and hot foods, stale food, heavy food, foods which have not been fully cooked, too much food or water, certain fruits and vegetables and hot, spicy, greasy and sour food.[45] Interestingly, my findings are consistent with this study. One may assume that other perceived causes of diarrhoea is central in the Okhaldhunga area, such as notion of contaminated water and food, the child playing in the dirt, teething and supernatural causes such as evil spirits (*lagu*) and "bewitched food", as described in the literature.[46] However, this question is outside the scope of this study.

The study on diarrhoeal causes that is referred to in the above paragraph shows that fluids are restricted more commonly than foods when the child has diarrhoea. Whereas 75 % of the respondents in that study reported that they sometimes or always restricted fluids, food was withheld in 58 % of the cases of childhood diarrhoea.[47] That study was conducted 25 years ago, and since then much has been done to educate the population on fluid balance and dehydration. Likewise, a huge effort has been made in the promotion of ORS. This is evident in the present study, as most of the parents knew about ORS, and fluid restriction was not reported on any occasions. Moreover and as previously discussed, continued breastfeeding during diarrhoea were seen as important. This illustrates that food taboos and notion of diseases is a dynamic and open system. It shows that the people possesses the ability to acquire new knowledge and has the potential to integrate it in the feeding practices.

Concluding remark

This study reveals a complex system of food beliefs and a huge individual variation in dietary practice among the people of the Okhaldhunga region. However, there are certain shared principles that serve to generate the various perceptions of food

[45] Stapleton, M. 1989. "Diarrhoeal disease: precetprions and pratices in Nepal" Soc Sci, Vol 28, No 6, p: 593-64, 0277-9536/89
[46] Ibid.
[47] Ibid.

consumption. Foods and fluids are prescribed as being strengthening or weakening to health in terms of its qualities such as pungency (hot and spicy), having strong tastes (bitter and sour), being easy to digest (light and soft) or difficult to digest (heavy), clean or unclean (*basi*) and "hot" and "cold". These qualities of food are interlinked and overlapping and must be seen in relation to the perception of illness and different physiological and psychological states such as pregnancy, post-partum period, breastfeeding and the various stages of childhood.

The findings reveal that women are considered to be especially weak during pregnancy, in the post-partum-period and during lactation. The same apply to infants and children during illnesses. As a consequence, they should avoid food perceived to be harmful to them in the vulnerable states, including food with strong tastes, *basi* food and food that is not easily digestible. These are general principles that appear to be of different importance in the various settings. For example, *basi* and indigestible food is especially essential to avoid when the child has diarrhoea or abdominal pain, and food with strong tastes (bitter, sour, hot and spicy) were especially avoided by lactating women. A common perception is that the quality of the breast-milk is determined by the diet of the mother, and qualities such as "indigestibility" and "coldness" could be passed through the milk and harm the child. Particularly care in avoiding harmful food were taken when the mother was breastfeeding a sick child, as the harmful qualities of food, such as *basi* or indigestibility, could lead to chronic bad health or exaggerate illnesses.

The traditional ajurvedic perception of the abstract valences "hot" and "cold" appear to form the basis for many of the food taboos found in this study. Diarrhoea, fever, pregnancy and abortions were considered hot states. In these cases, hot food should be avoided and cold food should be eaten preferentially. Respiratory diseases were on the other hand considered cold diseases, caused by environmental cold and cold food and fluids, and thus treated by hot food. However, one has to keep in mind that these general traits conceal huge individual variation in the perceptions of hot and cold food items and illnesses.

Even though the people in the Okhaldhunga region operate within a complex system of food beliefs and practices, the system appears to be open and dynamic. Ultimately, the decision of selection, allocation and consumption of food and fluids is left to the individual. The flexibility of the feeding practices is evident in that the staff of the Okhaldhunga District Hospital experience that patients seek advice on dietary

prescriptions and proscriptions. In this lies a huge potential in facilitating feeding practices that are beneficial to health and discourage harmful practices and unnecessary food restrictions.

Appendix

Translations

Dhal	lentils
Bath	rice
Sorbatom pito	special porridge
Gee	clarified butter
Sag	dark green leaves
Sardi	Cold (food)
Chiso	Cold (environment)
basi	Polluted/unclean (food)
tarkari	curried vegetables

Letter of information – English version

Nutritional study among pregnant and breastfeeding women and sick children

The District Hospital of Okhaldhunga is participating in a study conducted by the medical student Kristin Langdalen from the Medical Faculty, University of Oslo, Norway. The aim of the study is to investigate what kind of food and fluids that are avoided by women when they are pregnant and breastfeeding, and by children when they are sick. In the study pregnant and breastfeeding women and parents of sick children will be asked to give an interview concerning their practice and thoughts about nutrition. Kristin Langdalen will conduct the interviews, through an interpreter.

The information obtained from the interviews will be analysed and used to examine food and fluids that are avoided. The results will be presented in general terms.
All information obtained from the interviews will be treated confidentially. Participants will be annonymised after the interview by using participation-identification codes only known by the investigator. No persons will be identified in the final presentation.
You are invited to take part in this study. Whether you take part or not, the treatment given to you at the Okhaldhunga District Hospital will not be affected in any way. If you choose to take part, you may at any time withdraw from the study. Please fell free to address any questions about your participation to Kristin Langdalen. You may contact me directly or through the Medical Coordinator at Okhaldhunga District Hospital, Erik Bøhler.
The study will end December 2013.

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Erik Bøhler (Supervisor/ Medical Coordinator Okhaldhunga District Hospital)
Okhaldhunga District Hospital
Okhaldhunga, Nepal

Your Sincerely,

Kristin Langdalen

Letter of information – Nepalese version

जनकारी पत्र

गर्भवती र बच्चालाई स्तनपान गराईरहेका महिला र बिरामी बच्चाहरुको बारेमा पोषण सम्वन्धि अध्ययन

नर्वेको ओस्लो विश्वविद्यालय को औषधी संकाय का विद्यार्थी Kristin Langdalen द्वारा गरिएको अध्ययनमा जिल्ला अस्पताल ओखलढुंगाले सहभागिता जनाइरहेको छ । यो अध्ययनको उद्देश्य गर्भवती तथा बच्चाहरुलाई स्तनपान गराईरहेका महिला र बिरामी अवस्थामा बच्चाहरुले कस्ता खाना तथा रसहरु इन्कार गर्दछन् भन्ने छ । अध्ययनको क्रममा गर्वभति महिलाहरु र बिरामी बच्चाहरुको बुवाआमालाई पोषण सम्वन्धि तिनीहरुको सोचाईका बारेमा अन्तरवार्ता लिईनेछ । यो अन्तरवार्ता Kristin Langdalen द्वारा दोभोष वा क्यासेटमा भएको तत्थांकको सहयोगमा गरिनेछ । अन्तरवार्ताको जानकारी पछि उक्त टेप नाश गरिनेछ । अन्तरवार्ता बाट प्राप्त जानकारी बिश्लेषण गरिनेछ र इन्कार गरिएको खाना झोल कुराहरुको परिक्षण गर्न प्रयोग गरिनेछ । अन्तरवार्ता पछि अन्तरवार्ताको परीणाम लाई सामान्यीकरण गरिनेछ । अन्तरवार्ता बाट प्राप्त जानकारी गोप्य राखिने छ । सहभागीहरुलाई गोप्य राख्नको लागि सहभागिता परिचय संकेत प्रयोग गरिनेछ र उत्त कुराको जानकारी अनुसन्धान कर्तालाई मात्र हुनेछ । कुनै व्यक्तिलाई अन्तिम प्रस्तुतीको बेलामा परिचित गराईने छैन ।

तपाईलाई अध्ययनमा सहभागीताको लागि निमन्त्रणा गरिन्छ । सहभागिता जनाए पनि नजनाए पनि ओखलढुंगा जिल्ला अस्पतालको तर्फ बाट तपाई लाई गरिने व्यबहारमा कुनै असर पर्ने छैन । यदि तपाई सहभागी हुन चाहानू हुन्न भने कुनै पनि समयमा अध्ययनबाट बाहिरीन सक्नुहुनेछ । कुनै पनि प्रश्नको बारेमा स्वतन्त्र रुपले Kristin Langdalen समक्ष आफ्नो सहभागिता जनाउन सक्नुहुनेछ । ओखलढुंगा जिल्ला अस्पतालको मेडिकल संयोजक Erok Bohler को माध्यमबाट वा प्रत्यक्ष रुपले मसंग राख्न सक्नुहुनेछ । यो अध्ययन इं.सं. २०१३को December महिनामा समाप्त हुनेछ ।

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Erik Bohler (supervisor /Medical coordinater Okhladhunga District Hospital)
Okhldhinga ,Nepal

Letter of consent - English version

I have read and understood the informational note concerning the study about nutrition of pregnant and breastfeeding women and sick children, conducted by the medical student Kristin Langdalen. I hereby agree to take part in the study and that the information gathered from the interview will be used as described in the Letter of Information.
I am aware that it is voluntary to sign this letter of consent, and that a signed letter is valid for an unlimited amount of time, unless I retract my consent. I am aware that I at any time may retract my consent by contacting Kristin Langdalen directly or through the Medical Coordinator at Okhaldhunga District Hospital, Erik Bøhler.

Date: _____
Name: _____
Signature/Fingerprint: _____

To be signed by the person giving the information:
I consent that I have given written and/or oral information from "the letter of information" and "letter of consent".

Date: _____
Name: _____
Role in the study: _____
Signature: _____

Letter of consent - Nepalese version

सहमति पत्र

औषधि शास्त्रका बिद्यार्थी Kristin Langdalen द्वारा गर्वभति वा स्तनपान गराई रहेका महिला र बिरामी बच्चाहरुको पोषणको बारेमा अध्ययन मैले पढे र बुझे म यो अध्ययनमा सहभागिताको लागी सहमत छु र अन्तरबार्ता बाट प्राप्त जानकारी जानकारी पत्रमा उल्लेख गरिएको अनुसार प्रयोग गरिने कुरामा बिश्वस्त छु। मैले मेरो स्वेच्छा अनुसार यस सहमति पत्रमा सहि गरेको छु र यो हस्ताक्षेरित पत्र मैले असहमति नजनाउनु जेल सम्मको लागी वैध रहनेछ। म ओखलढुंगा जिल्ला अस्पताल को मेडिकल संयोजक Erik Bohler मार्फत वा Kristin Langdalen सँग प्रत्यक्ष सम्पर्क गरि यस सम्बन्धि मेरो सहमति फिर्ता लिन सक्नेछु।

मिति : _____

नाम : _____

सही /औलाछाप : _____

जनकारी दिने व्यक्तिको सही :

मैले जानकारी पत्र र सहमति पत्र मार्फत लिखित वा मौखिक जानकारी दिएको कुरा म स्विकार गर्दछु।

मिति : _____

नाम : _____

अध्ययनमा भुमिका : _____

सही : _____

Interview guide

Interview nr:
Date/time: .
Where:
Who:

Name and age of mother:
Sex and age of child:
Number of children:
Why at the hospital:

Residens:
Religion:
Caste:
Occupation:

Food and fluids to be avoided/beneficial:

- Pregnant
- Post-partum
- Breastfeeding (in general and when the mother is breastfeeding a sick child)

- Childhood disease:
    - Fever
    - Cold and cough
    - Pneumonia
    - Diarrhoea
    - Jaundice
    - Swelling and joint pain
    - Worms
    - Injury
    - Chronic disease
    - Weakness

Other topics:
- Causes of disease (hot/cold, contaminated fluid/food)
- The preparation of the food (who makes it, caste)
- Who gives advice (grandparents, neighbours, health post, hospital, shaman)
- Knowledge of nutrition