

12 JULI 1988

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SKRIFTER

E60.1

SERIE ERNÆRING  
VOL. 2, SPECIAL NO. B, 1987

-MALNUTRITION-



DIRECTORATE OF FISHERIES  
BERGEN-NORWAY

SOCIO-CULTURAL  
ASPECTS OF  
MALNUTRITION  
IN  
MARGINAL COMMUNITIES

BY  
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1987

Socio-cultural aspects of  
malnutrition in marginal  
communities

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Introduction.

The word "anthropology" comes from the Greek word *anthro-*  
*pos* which means man and *logos* which means discourse.  
The intention of the anthropological study of human culture is  
to identify the pattern of a group's learned and shared beha-  
vior (ideas behind behavior), especially their socio-cultural  
phenomena. A socio-cultural system consists of values, attitu-  
des, habits and customs that are acquired by learning. This  
learning starts from the earliest period of life. Much of it  
is not deliberately taught by anyone.

The study of the socio-cultural system of a group of people  
is based on evaluating the practices and laws regulating the  
relationships among the individuals in a society as well as  
explaining the processes which have evolved to satisfy the  
basic physiological and psychological needs of the societies  
(Maslow, 1943).

There are certain general similarities in all cultures in  
the world because all people must solve certain fundamental  
problems for their survival. Each and every human being has to  
eat, drink, protect himself from danger, maintain at least  
some cooperation with others, face illness and death. However,  
the ways in which these problems are solved may differ greatly  
from one culture to another. Anthropologists could identify  
hundreds of distinct cultures throughout all the continents.  
The societies separate from each other, to some degree, into  
separate cultural worlds.

As we know culture is learned by people, and is therefore  
subject to change and this is the most optimistic fact about  
human behavior. The process is neither evolutionary nor sta-  
tic. Some relatively superficial aspects of culture change rea-

dily and some aspects, especially those based on basic values and beliefs, change very slowly and mostly with great difficulty. Most likely social behavior arose from the adaptation of the individuals and cultures to the natural environment and thus began the process of change and development.

Malnutrition is a common disease of the world today. It may be either in the form of overnutrition or undernutrition. However, malnutrition is commonly used to mean undernutrition. At present it is the single most extensive and serious public health problem affecting the people of the third world. Malnutrition is the status of health caused by insufficient intake of necessary foods and nutrients over a long time. The major examples are kwashiorkor, marasmus, xerophthalmia, beriberi, goitre, etc.

Malnutrition may derive from various factors individually or collectively. Among them are insufficient intake of food and nutrients due to poverty, intake of wrong food due to ignorance, inborn error of metabolism, infections, political factors, cultural factors and environmental factors. The cause of malnutrition can be studied at two levels in a society, namely, macro and micro levels. At the macro level the vital forces are politics and economics and sometimes natural disasters which produce conditions in communities and households that lead to malnutrition (Fernandes and Pelto, 1981).

At the macro level the political-economical system deals with the food production and distribution system. Food scarcity may arise in a locality due to-

- Production of food for an external market instead of meeting local needs.
- Production of non-food for cash.
- Natural disasters.
- High number of landless households. Etc.

According to the theme of this paper the emphasis will be on the micro-level of the communities since socio-cultural aspects of malnutrition can be observed at that level of the communities. However, the task is not as simple as it sounds.

A systematic approach is needed to collect a broad range of data on food intake patterns, as well as socioeconomical and cultural contexts (Scofield, 1979). The identification of a need for a systematic approach to a nutrition program is very recent. Fernandez and Pelto (1981) mentioned, "...Community level nutrition has, for the most part, been carried out without benefit of theoretical and technical expertise of anthropologists and other community-oriented social science researchers"

An anthropological study on applied nutrition may bring out the real picture of the problems of malnutrition of the marginal communities within their cultural contexts. Such attempts are now in progress and only limited data are available from different sources.

#### Cultural Factors in Nutrition:

Nowhere in the world do people eat every edible plant and animal available to them. In the 1974 famine in Bangladesh FPC (Fish Protein Concentrate) was generally not accepted by the people even though they were struggling with death. Most of the people in the world have conservative food habits. They like what they were fed in their childhood. They tend to like what was served to them at home, at school and at social feasts. Individuals during the growing stage are also introduced by friends to some foods that are not served at home. However, food habits can be changed as a result of influence, motivation, education, etc. under adaptation to local circumstances. Individual food preferences develop based on some of the following factors:

- a. The type of food available in the locality.
- b. The foods served at home.
- c. " " " in schools and community houses.
- d. " " " at cultural feasts.
- e. " " permitted by one's religion.
- f. " " " " culture.
- i. " " which have "good" taste, texture or colour, etc.

Culture plays like a screen through which an individual views everything including his food (Ritchie,1967). Each society itself defines what is a food and within each the general definition of food has a wide range of meanings. For example, in many societies some foods are considered to be used for home consumption, some for guests, some for religious obligations, some are used for selling and some are for well-off people and some for the poor. Even within the family some foods are for men and others for women and children. If it is desired to introduce changes in food habits, it will be wise to study carefully the existing cultural context before undertaking any project.

The role of some important socio-cultural factors which are possibly responsible for creating malnutrition in the marginal societies will be considered in the following discussion although there will be a great deal of overlapping. The factors are:

1. Ignorance due to social practice.
2. Religious influences.
3. Cultural practices.

1. Ignorance due to Social Practice.

Besides other factors, ignorance in regard to nutritional needs is an important fundamental cause of malnutrition in many marginal communities. It is perhaps the most important single factor underlying poverty and malnutrition and one cannot blame people for wrong food habits due to a lack of knowledge. Vasco da Gama can not be blamed for the death of 100 out of 180 crew members due to scurvy. They were ignorant of the fact that vitamin C in fresh fruits prevents scurvy. Hundreds of thousands of children die in rural areas of many countries because their parents do not know what foods are necessary to prevent their nutritional diseases.

A mother from a poor family who knows the basic principles of nutrition will make better use of the available limited food resources than an ignorant mother who is economically

favoured (Devadas, 1970).

There is a widespread false belief among poor and ignorant women that the milk of a pregnant mother is bad for her weaning child/children. As a result they may make the following mistakes with their children:

- a. They abruptly wean and start non-hygienic bottle feeding.  
or,
- b. They are influenced by unwise advertisements in the press or on the radio which advocate the advantages of artificial foods (for commercial reasons) and start feeding with the comparatively cheapest baby food.

A child is very susceptible to infectious diseases due to non-hygienic bottle feeding or poor quality baby food. Proper cleaning of bottles or utensils used for baby feeding is not always possible, whereas ready-made breast milk would have been hygienic and nutritious. A family that is ignorant of their nutritional needs cannot make full use of their opportunities and improve their health status.

## 2. Religious Influences:

Religious dicta generally restrict some foods of animal origin. Edible animal meat is a rich source of high quality protein. The requirement for protein is much higher in childhood than in adulthood. In proportion to its weight a six month-old infant needs about five times more high quality protein than the average adult. Proteins and calories are needed to ensure normal growth, maintenance, reproduction, etc. When a community contains more than one religious group one may identify differences in nutritional status among the groups due to their respective religious restrictions on protein-rich foods.

### a. Avoidance of Pork.

The avoidance of pork by both Jews and Muslims is well

known. According to this belief the benefits of eating pork is much smaller than the harmful effects; avoidance of pork by the Hindus is a question of social status. Only the so-called untouchables of the Hindu community in India and South-East Asia eat pork. However, they stop eating pork in order to partake in the caste-climbing process. The Hindu rejected pork basically for two reasons.

1. The objection to the filth of pig.
2. " " of killing.

The Buddhists and the Christians eat pork. However, the frequency of eating pork by these groups in Bangladesh is very low. The reasons for this are unknown but it may be due to traditional Bengalee food habits.

b. Avoidance of Beef.

Religious taboos and social practices must be considered in order to explain why cows are sacred and not a source of meat. A small percentage of bovine cattle and buffaloes are slaughtered for consumption. Stare and McWilliam (1977) argue that "sacred cows" consume food instead of being a source of food for the hungry people. I disagree because in other countries poor people can not afford to buy such expensive food regardless lack of religious prohibition. Alternatives can be observed, for example: a socio-latent-practice is found in India, where low-class poor people eat carrion (Harris, 1966). Nevertheless Harris explained briefly the contributions made by cattle and buffaloes in maintaining the ecosystem in India, therefore, an interrelation between religious practice and existing ecosystem is present. However, one should carefully evaluate Simoon's (1961) view that irrational ideologies which compel people to overlook foods that are abundant locally and are of high nutritive value, and to utilize other scarcer foods of less value.

As is the case with pork, beef is also eaten by some of the low-caste Hindus and this practice is again abandoned in the



caste-climbing process.

In the southern and eastern parts of Africa, cattle are considered a symbol of culture and prosperity. A bride can be bought in exchange for cattle. Some groups also view cattle as sacred as do the Hindus in India. Cattle are eaten only when they die a natural death or are slaughtered on ceremonial occasions. The Thais believe that one can not consume one's own domestic livestock but the animals are reared for exchange. The belief established the rule that cattle and buffaloes reared under the house cannot be slaughtered for home consumption (Lindenbaum, 1977).

c. Avoidance of Poultry and Eggs.

The avoidance of poultry and eggs varies from country to country. The Hindu rejection of chickens and eggs may be due to a combination of *ahimsa* (philosophy against taking life) and beneficial vegetarian practices. Also the feeling of the Hindus against the eating of chickens may be based on the use of chicken to appease the gods.

The Karen in Burma generally do not eat chickens. They believe that the chicken has divine powers. The bones are used in connection with prophecy. However, some selected people have to clean the bones for prophecying tasks by carefully eating the meat. The rejection of egg consumption within cultural contexts will be discussed later.

d. Religious Obligation.

Strict observations of religious obligations may influence the nutritional status of vulnerable groups. In a study Knutson and Selinus (1970) observed that vulnerable groups are affected nutritionally during the long fasting period of the Christians in Ethiopia. The fasting rules are made by the local church and forbid people not only to eat foods of animal origin but also to touch the forbidden foods or to inhale their smell as this is considered a break of the fast. As a

result, the whole food market the during fasting period is geared, to some degree, to the fasting pattern. There is very little prohibited food available at the market. Even though some of them can be found, no fasting mother likes to touch or prepare prohibited food for her children. To avoid such problems the children and the sick people are also encouraged to fast. However, fish, a protein-rich food, is more or less flexible in fasting rules and some people do consume fish during their fasting times.

In the same article Knutsson and Selinus point out the Muslim fasting practices in Ethiopia during the Ramadan. They say that to some extent the nutritional status of fasting people is affected by very hot weather but most of the nutritional needs are met at night. Moreover, the vulnerable groups are exempted from fasting in the Ramadan and the fasting rules do not prohibit a mother from cooking any food for people who do not fast.

The Hindu rules applying to the untouchable in India may have some nutritional consequences, especially for the children. When the food of a school child is touched by any person belonging to a lower caste or other religion it is considered unclean and will be thrown away. To secure one's caste position he/she is obliged to throw away the unclean food. This is a very expensive way of living for a poor family from a higher caste.

Well-off Muslim families slaughter animals in Eid-ul-Azha and the meat is distributed to their relatives, neighbors and poor people. The Hindus offer different kind of foods to their gods in different religious festivals. No doubt the distribution of foods to the poor people is a good thing if the distributor is well-off. However, many poor families strongly practise such sacrifice not only because of religious obligation but also in order to rescue the family status and prestige.

## 2. Cultural Practice.

Some cultural food practices may contribute to creating malnutrition in the poor communities. These practices are:

- a. Food taboos,
- b. Avoidance of some foods,
- c. Infection and malnutrition,
- d. Hot and cold theory,
- e. Uneven distribution of foods within the family,
- f. Social obligations,
- g. Changing food habits,
- i. Harmful food habits. Etc.

### a. Food Taboos.

The word "taboo" originates from Polynesia and connotes a sacred prohibition against certain things or people which make them untouchable in that culture (Caliendo, 1979). The system has been precisely practised by the Hindus in Bangladesh and India.

With regard to the prohibition of foods the tradition or convention objects to consuming the forbidden foods. A taboo may have to be followed by a whole tribe, by a part of a tribe, or by certain groups of people within the tribe. Tribes may be divided into subtribes, clans, lineages and families, any of which may have different food taboos.

One culture may look at another's food as poison in terms of food preferences because every culture has its own food taboos. Caliendo (1979) reports that certain groups of people in Uganda consider the appearance of the shrimp disgusting but regard the green grasshopper a delicacy.

Many food taboos are probably due to cultural unfamiliarity with the food. A good example is given by Simoons (1961). The Hazda hunter of Tanzania lives entirely on hunting and food gathering with no agriculture and no domestic animals. They have taboos against many strange foods. They do not accept certain fishes, flying ants, and plants, even though they

find their surrounding neighbors eating them. Simoons argues that although Western peoples do not find these foods appealing, they could have improved the nutritional status of the Hazda.

b. Avoidance of Some Foods.

It was mentioned earlier that no people of any society eat all edible plants and animals available to them. All people have likes and dislikes concerning food. Some food may be considered delicious by one group of people, while they are not acceptable to another group of people. Some Chinese may think it disgusting that some Africans eat insects, while Africans may think it is horrible that some Chinese eat dogs. Such attitudes are most likely the result of cultural habit established from earliest childhood. Horse meat is totally unacceptable in Asia but had it been served to Asians in their childhood then they might have accepted it without a second thought. The foods that people eat in childhood are seldom rejected in later life.

Pregnant mothers in some countries, e.g. in upper Burma, avoid protein-rich diets because the people believe that it is necessary to ensure a small baby and easy delivery. Ritchie (1967) found another belief practised in some parts of Asia according to which a lactating mother may produce toxic milk if her diet is based on rich animal protein. The people in some part of Africa believe that women become sterile if they consume eggs and that a child will grow to look like a goat if he drinks goat's milk (Latham, 1979).

Avoidance of certain foods, due to cultural practice or belief, may have serious nutritional consequences. In a study, Cassel (1957) reports on the traditional food habit of a Zulu community at Pholela in Natal, South Africa. The Zulu community could not generally recognize the relationship between health and diet. Agriculture was difficult due to poor soil in the locality. To maintain traditional eating habits the intake of fresh green vegetables was limited. Consumption of milk and eggs was restricted due to cultural food taboos. A married woman who lived with her husband's kin group was forbidden to

drink milk. Only the members of the kin of the head of a household could use milk which was produced by that man's cattle. The rule not only prevented her from drinking milk but also prohibited her from visiting any cattle house during her menses or pregnancy. It was believed that she could have an evil influence on the cattle.

The cultural food taboo on egg consumption was chiefly economical. Their general beliefs were-

- a. Consumption of eggs was a sign of greed.
- b. " " " hindered a chicken to be hatched.
- c. " " " by girls made them lascivious.

The nutritional anthropological approach to changing the food habits of the Zulu community will be discussed later on.

c. Infection and Malnutrition.

The correlation between infectious diseases and malnutrition is unfortunately little understood by most of the poor communities. When a child suffers from acute malnutrition the body becomes less resistant to infection. In general, a variety of infectious diseases aggravate a malnourished infant. People usually believe that infection is the cause of a child's death but not malnutrition. Lathan(1979) mentions, "*... the simultaneous presence of both malnutrition and infection will result in an interaction with more serious consequences for the child than the additive effect of the two working independently. This interaction is known as a synergistic effect. Infections make malnutrition worse and poor nutrition increases the severity of infectious diseases*"

One of the reasons for the mortality of children under five years of age in Bangladesh and other developing countries, is a misunderstanding of what Lathan has mentioned above. Generally, mothers and grandmothers restrict the food of a child who suffers from measles or diarrhoea or other diseases. Bar-

ley water or sago (mainly carbohydrate diets) are served. A healthy child may attain kwashiorkor or marasmus when the diet consists mostly of carbohydrate for a longer period. Moreover, their ideas about food and nutrition often determine the diet of the family.

However, cultural practices of "old mother's story" are not always harmful; in some cases they may contain hidden biological messages (Lindenbaum, 1977). As regards the infective diarrhoea of children, apparently old mother's advice does improve it's condition apparently when milk foods are replaced with barley water. Coello - Ramirez et al. (1972) reports that severe diarrhoeal disease is the result of a cycle of infections of the upper small bowel, impaired absorption of carbohydrates and bacterial catabolism of unabsorbed sugars. They suggested that diarrhoea can be improved whenever milk foods are avoided. The replacement of milk foods means the replacement of lactose (disaccharide). The social practices in relation to avoiding milk will also be explained within the framework of the "Hot and Cold" theory in the following section.

When the "old mother's" advice is followed for a non-infective diarrhoea the consequences are severe. A child suffering from protein deficiency may have a reduced secretion of digestive enzymes, particularly from the pancreas. This lack of sufficient enzymes may be a cause of non-infective diarrhoea. In Africa, "weaning diarrhoea" is one of the examples (Latham, 1979).

Jenner (1967) observed that people in West China could not use fresh fruits except citrus fruits even though they grew in abundance because consumption of fresh fruits made them sick. The infection spread through fresh fruits due to cleaning or washing the fruits with water from the local slough or paddy field (the water was contaminated by human waste). They might even drink from such sources. As a result they might be infected with typhoid, bacillary or amoebic dysentery.

d. Hot and Cold Theory.

In ancient times it was believed that a man's diet or medi-

cine should balance with the status of his bodily humor (blood, phlegm, black bile, and yellow bile). According to the "hot and cold" theory, the bodily humors vary in temperature. Health is thought to be a state of balance between all these humors. Therefore, foods, medicine and diseases are classified in two categories. Some are hot and others are cold. Foods and medicines are used therapeutically to restore the ill body to a healthy state. Ayurvedic and Arabic medicine are based on this Hippocratic humoral theory. It first originated in Arabia and was then transmitted to Spain and Portugal and the rest of the Western hemisphere (Lindenbaum, 1977).

The concept of hot or cold is not in the sense of temperature, but in the sense that they are believed to produce or reduce body heat after application. Hot foods are preferred when a body is suffering from "cold" diseases and cold foods for the "hot" diseases. The effect of hot and cold foods does not neutralize each other but are independent. However, the same food is not always considered hot or cold in all societies. For example, eggs are regarded as cold in Thailand, while they are hot in Bangladesh (Lindenbaum, 1977).

The practices of the "hot and cold" theory may in many cases have serious nutritional consequences. For example, in Malaysia, eye diseases caused by vitamin A deficiency are prevalent. Thousands of children lose their eyesight every year. Papaya and green leafy vegetables are the cheapest available foods rich in provitamin A. These fruits and vegetables are withheld from young children because they are considered to be cold foods. In Bangladesh milk is withheld from young children suffering from indigestion because it is considered a hot drink.

In a few cases the "hot and cold" theory is useful for social health. Lindenbaum (1977) reports from an analysis of "hot and cold" theory practice in Bangladesh. Milk is not only considered a hot drink but is also graded into different degrees of "hotness". Buffalo's, cow's, and goat's milks are graded in a descending order of heat. Buffalo's or cow's milk is considered toxic for a newborn child. The biochemical reason for this is that a failure of calcium absorption in the

first few days of life on preparation of cow's milk may lead to tetany (Davidson et al. 1979). If goat's milk is not available highly diluted cow's milk or glucose water or sugar water is generally served to a new born child. The ranking of milk according to "hotness" is really in relation to the content of lactose. For example, buffalo's milk is the richest in lactose and goat's milk is the poorest. Reasonably, curd, a form of milk considered to be "cold", has a negligible lactose content due to the conversion of lactose into lactic acid by bacterial fermentation (McCracken 1971).

Withdrawal of animal milk from the diet of an infant suffering from diarrhoea has some temporary physiological benefit but long-term withdrawal has the disastrous effect of precipitating the child into a dangerous condition of protein calorie malnutrition.

e. Uneven Distribution of Foods.

Besides other factors that produce malnutrition the practice of uneven distribution of foods within the family is another serious factor which aggravates the nutritional status of vulnerable groups, e.g. children, pregnant, and lactating mothers. In most societies there are culturally accepted ways in which different categories of people should behave towards each other even regarding food distribution. Foods are often distributed according to the category of social status rather than to nutritional needs.

From a nutritional point of view, one of the significant concerns is the differentiation made between husband and wife, parents and children, boys and girls, guest and host, old and young, etc, in most of the societies in the developing countries. In the patrilineal and patrilocal societies the practice of letting the men eat first the best food both in quantity and quality is followed. The young children and young women of child-bearing age get the worst. Even the remaining portion of the food may again be distributed unevenly. Often boys have higher priority than girls. The mother may be left with nearly empty dishes. If food is plentiful this does not create great



problems, but if food is short, the nutritional needs of women and children will not be met.

In the traditional societies in Bangladesh and India the families are typically seen to practise mutual sacrifices among inter and intra family members. This good unselfishness of family members becomes problematic when the extra sacrifices come from women. A wife is proud of her sacrifices and feels satisfaction after the adult males of her family are properly fed at the expense of her own share. They feel that eating with the men is a sign of greed.

The best ways to show how much a wife loves her husband, in terms of feeding him, can be outlined as follows--

- a. Serving food at the proper time (she should have the food ready before he returns).
- b. Serving the best part of the prepared food.
- c. Children should not disturb during his meal.
- d. Father-in-law should be fed properly.
- e. Her husband should not be let to recognize the remaining food is insufficient for the rest of the family. Etc.

In many cultures a woman offers the choice food to her husband or to the elders and then to other "productive" members of the family. Children and women are frequently the last to be served (LeGros, 1968). Caliendo (1979) reported that in India the father-in-law has a position of prestige and receives food first; the father of the family has the second priority. In some Sudanese societies men and women eat separately; the men are fed first; women and children receive the leftovers (Ernster, 1976). In some African cultures, meat is not regarded as food but as a luxury item which sweetens the mouth. Therefore, it is reserved only for men (Caliendo, 1979). In Bangladesh a guest is given first preference at meals. He will be served the best food available in the house or local market (even by borrowing money from a neighbor). If food is short the guest will not be allowed to understand what is left for the host family. The practice is a symbol of prestige, love and hospitality.

Even in a matrilineal society like the Bemba, a tribe in Zambia, the feeding of the son-in-law is an important social obligation for the family and also a question of prestige. It is a shame for a Bemba woman to be unable to provide properly cooked food to the male relatives. In one case, a second wife whose garden was destroyed by locusts lived with her three children for two days entirely on mushrooms while the rest of her millet was prepared for her husband. She did it to restore her prestige, even though she knew that her husband was more than adequately fed by his head wife, who had so much millet that she used much of it for brewing beer (Ritchie, 1967).

f. Social Obligations.

There are various kinds of social obligations related to food which are observed in different societies. In many societies economic gain is valued less than social acceptance. People may give away good food on special occasions such as religious festivals, wedding ceremonies, funeral parties, celebrations for a newborn baby, etc., or they may work for others without pay. These sacrifices mean to them goodwill and the certainty of help from members of the family or neighbors in case of future hard times. In some cases social obligations compete with family economics and result in a poorer diet for the family.

Certainly the most unfair social obligation is found in many societies in Bangladesh and India where the parents of a bride, at the wedding ceremony, should offer a standard meal to a good number of people within three categories. They are--

- a. A certain number of people from the bridegroom's side.
- b. All the close relatives of the bride.
- c. Most of the members of the society she belongs to.

The number usually varies from 200 to 1000 according to her status in the society. A good meal is not always enough, comfortable transportation or the cost of transport is also required. The saddest part of the system is the dowry.

In spite of the dowry system the parents, grandparents, brothers and sisters of the bridegroom should be honoured by providing them with new clothes. This kind of social obligation may be one of the causes for sex discrimination in Bangladesh and India. Very few fathers are happy for a daughter. The parents of a girl start saving money, gold, utensils and furniture long before the girl becomes mature. The result may often be poorer diets for the family for a long time.

It was mentioned earlier that in the Bemba tribe in Zambia the feeding of a son-in-law is one of the economic as well as social obligations of a marriage.

Caliendo (1979) reports that people in New Guinea will keep and feed fully grown pigs for one or more years in order to be sure that they will be ready to fulfill social obligations such as a funeral, feast for an aged member of the family or a wedding ceremony, etc.

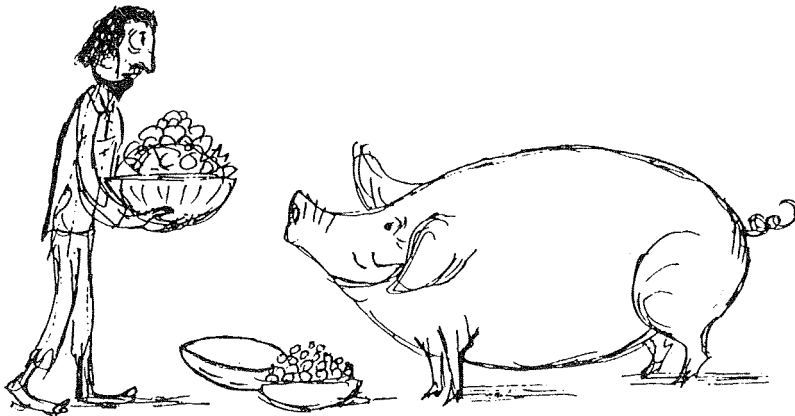


Figure 1. *The lion share of the daily food is given to the animals due to social obligation.*

g. Cultural Superfood.

When people think of foods essential for life, they think in terms of their particular staple food which is their cultural "superfood". If superfood is not served then the meal is no longer considered regular but a snack. If somebody in Bangladesh reports that he has not had rice for the last two days it is considered that he has not eaten at all. Side dishes are honoured only if rice is present.

When it comes to feeding children and also women, the family often believes that if superfood is eaten, little else is needed. Side dishes usually are very hot for the children due to an extensive use of spices. Parents feel safe when they observe the children have eaten enough superfood and do not see the need for side dishes rich in protein and vitamins. Many children in Bangladesh suffer especially from beriberi due to eating polished rice (lack of vitamin B<sub>1</sub>, thiamine) or night blindness due to lack of vitamin A. Locally available wild greens are considered animal's feed or food for the poor during crisis. People simply do not know that the nutrients in the green leaves could save their children from blindness.

Another good example can be drawn from Caliendo (1979). Millet is the staple and superfood for the poor people living in Northern Uganda. Since millet is a relatively good source of protein and energy, there is a low incidence of protein calorie malnutrition (PCM). In the southern part of Uganda however, people are relatively rich but there is a high incidence of PCM among children. Probably because their superfood is steamed plantain, a type of banana which contains only one per cent protein (Jenner, 1967) and is high in water and cellulose. People eat for satisfaction and not for food value.

h. Changing Food Habits.

People are changing their food habits continuously in spite of human conservatism about food. People change their food habits due to changes of environmental, economic, social and political factors and health status as well as due to moti-

vation, education, influences etc. Therefore, Mead (1962) expressed the importance of evaluating "how do food habits change" and not "How do people change food habits".

It has been observed that some changes of food habits are beneficial and others are harmful. A change to food habits and practices that are good from a nutritional point of view is worthwhile whereas the opposite is not only harmful but may have dangerous consequences may be dangerous. For example, some of the changes in food habits that have been introduced in most developing countries by the industrial world are harmful. Among these are-

1. Changes from lightly milled to highly milled cereals.
2. Bottle feeding.
3. Industrial baby foods.
4. Expensive soft drinks with low nutrient contents.
5. Replacement of unpolished rice with polished.
6. Introduction of tea for infants.

Discontinuing breastfeeding even in the rural areas is a contemporary fashion and a symbol of prestige. A belief has developed that it is superior to and more sophisticated than bottle-feeding. Due to such beliefs breastfeeding tends to be regarded as a primitive practice and the bottle becomes a status symbol. The highly reputed Coca Cola drink which many nutritionists claim is a symbol of prestige and harmful to drink is readily available even in remote areas.

Such psychological motivations arise mostly from unwise advertisements (both in newspapers and on radio). Many commercial products are attractively labeled with "rich in vitamin C" or "protein-rich weaning foods". They are usually very expensive compared with the locally available foods that can supply even better nutrients. But the mothers are convinced by the advertisements that they save money and they put strong pressure on their husbands to be able to serve some manufactured baby foods to their children. Some of these commercial foods are often inferior in quality and are bad for the health of the vulnerable groups. But people are blind to the disad-

vantages of foreign goods and the use of foreign goods is a status symbol. Any bad consequence is often blamed on the method of preparation but not on the quality of the food.

"Basmattee", a polished rice, is meant for well-off people and is very popular in Bangladesh, India and Pakistan. Luckily the majority of people who are poor cannot procure it. People consider that the more white the rice is or the more finely milled the wheat is, the more superior is the quality. It is a question of prestige for a well-off person to buy nonpolished rice from an open market. Jenner (1967) reports that the poor people were better nourished with sweet potatoes, abundant in West China, when white polished rice became too costly.

#### I. Harmful Food Habits.

"Chapattee", a flat bread, is extensively used in Pakistan, Afganistan, Iran, Iraq and some parts of India and is a poor man's diet in Bangladesh. No doubt, wheat contains more protein than rice and the former can provide cheaper dietary protein than the latter. However, chapatee has a higher phytate content than leavened bread or rice. This phytate binds zinc, particularly in the presence of excess calcium, to form nonabsorbable complexes (Sever, 1975). Zinc deficiency in the human body may lead to retarded growth and sexual development (Davidson et al. 1979). Sever (1975) observed a relation between central nervous system malfunction in Bombay (India) and dietary phytates in chapatees. The phytates can also impair iron absorption and lead to anemia.

Beriberi, due to polished rice deficient in thiamin, is a contemporary health problem in Bangladesh and in some parts of India, Thailand, Burma and Vietnam. The problem is aggravated by some harmful food habits. Tea drinking and the chewing of betel nuts introduces antithiamin factors (Lindenbaum, 1977). These habits are common in India, Pakistan, and Bangladesh, whereas in Northern Thailand the habit of chewing betel nuts and the eating of raw fermented fish contribute to thiamin deficiency. Fermented fish and fermented tea leaves contain thiaminase, which destroys thiamin activity (Vimokesant et

al., 1975). Cooking fermented fish will destroy the thiaminase activity and improve thiamin activities.

#### The Need for a Nutritional Anthropological Study.

An American oil company while working in one of the oil-rich countries in the Middle East wished to improve the nutritional status of its employees. The company built a standard cafeteria where the workers were provided with one nutritious meal a day at a nominal charge. By providing such service the management expected to create goodwill as well as more healthy workers. But the results were exactly the opposite. Fathauer (1960) reports as follows--

The worker expressed extreme displeasure over the arrangements, maintaining that this was another example of insulting American behavior an expression of the belief that the workers were inferiors who need not be treated with dignity. Dismayed by this reaction, the company investigated to find out what had gone wrong. The answer proved to be the cafeteria pattern of providing the food. In this country, only beggars stood in line to be fed. Asking the workers to pass through the cafeteria line was insulting them by implying that they were beggars, without self respect, dependent on the company for a hand-out.

Therefore, the intention of a nutritional anthropological study is to disclose cultural codes that are both tightly and loosely bound with the nutritional status of the people under consideration. Such a study can help a nutrition intervention program only when the real picture of the interrelation between culture and food and their mutual influence upon one another is understood.

Since consumption is a precondition of nutrition, diets which are culturally unacceptable can not be nutritious and such foods cannot be forcefully fed under the concept of humanism unless the clients are somehow motivated. Many such aid programs failed (Johanna et al., 1981). Free distribution of

F.P.C in Bangladesh during the 1974 famine is an example. Nevertheless, long-term motivation could at least introduce F.P.C. in the Bengalee dishes of the low-income groups.

Nutritional anthropologists can contribute to improving the nutritional status of people by providing data which may help to solve some of the problems associated with food intake (Lindenhau, 1977). Cultural codes should be closely examined because they may contain hidden biological messages, as we have seen regarding the "hot and cold" practice of milk in Bangladesh and India. Keesing (1974) argued that there is a need to understand how people organize and sustain their social life and how experience and biology interact. Nutritional anthropology is clearly concerned with both aspects.

A nutritionist needs help from an anthropologist in finding the perspective of cultural food ways and the possibilities of overcoming different forces (cultural codes) that hinder the right foods to be consumed. A food way may be defined as the way a food must pass from the point of planning for harvesting or purchasing to the point of consumption. An anthropologist can identify the different forces that work against admitting the food or work for its entry into the food way (Lewin, 1958).

There is a tendency to assume that the food habit or the food culture of a society is relatively uniform but in reality there are variables in both nutrition and health beliefs in the intracommunity, intrasociety and even in intrafamily (Dewalt and Pelto, 1977; Logan, 1977). To understand the nutritional status of a people the collection, description and analysis of beliefs and attitudes of their food culture or food ideology are vitally important and this task should be done by the nutritional anthropologist. Fernandes and Pelto (1981) mention that the recognition of a need for a "systematic approach to nutrition" is the recognition of the help from anthropological expertise.

From the empirical examples given earlier, it will be easier to show the effectiveness of a nutritional anthropological study in improving the nutritional status of the Zulu tribe in Pholela. Introduction of milk into the diet of the



Zulus woman was considered very important to alleviate infant malnutrition. Historically the Zulus were a nomadic pastoral people having large herds of cattle; milk and meat had played a prominent part in their dishes (Cassel, 1957). In group sittings with the people, especially with the old people trying to recall memories of their earlier food habits, the health workers were able to make them understand that milk was important, without it no food could be considered complete. After careful consideration of the cultural complications powdered milk was introduced with no secrecy about the fact that the milk did not originate from cows belonging to the Zulu community. The Zulu found the milk as powder but did not resemble the milk they were used to. As a result, after group discussions the powdered milk, but not the milk from their own cows, was permitted to be consumed by the women. The only barrier which was soon identified was that powdered milk being an unfamiliar food had a strange taste. To overcome the problem demonstration of different methods for incorporation of the powder into the family diet were given. Within a year the demand for powdered milk outgrew the supply. Finally in some of the more educated families women after consultation with the health centre started to consume milk from their own cows without facing any marked reaction from the rest of the community.

Egg consumption was more a matter of economic consideration than of deep-seated cultural tradition. Efforts were directed to increase the egg production. Ninety-five per cent of the Zulu families were domesticating poultry and when enough eggs were produced and the palatability and nutritional values of eggs were highlighted, they accepted the idea that the excess could be consumed. Demonstration and methods were given in order to incorporate eggs into familiar diets. To increase the consumption of green vegetables their nutritional value and similarity in taste to formerly-eaten wild greens were emphasized and the people were encouraged to do gardening.

Within 12 years of this health program the infant mortality rate was reduced from 276 per 1000 live births to 96, pellagra and kwashiorkor were all but eliminated and the average weight

of a baby at one year of age was increased by about 1 kg. The health centres of the neighboring areas provided only medical care and no such changes were discernible. It can easily be understood from this study that this improvement could only be possible with the worthwhile collaboration between social science and nutrition.

Suchman (1963) mentions that the field of nutrition offers the anthropologist a wide range of opportunities for collaboration with professionals in both the social sciences and physical sciences. By applying his knowledge the anthropologist can contribute to the solution of problems of basic human welfare.

#### CONCLUSION.

The role which socio-cultural factors play in determining the human food behavior and nutritional status is extremely important and its understanding is a precondition for the design of a health program.

Cultural food ways are developed by a complex of tightly as well as loosely bound human ideas, beliefs, practices and resources. Each has a logic of his own. "This is our custom, and this is how it has always been" is the explanation which can only be expected. The reasons for such customs may be lost in the mists of antiquity. But the people believe that the customs descended from their ancestors play an important role in protecting a person from all sorts of misfortune and ill health. The effective way to help people who hold strong cultural beliefs is to work within the system as closely as possible. It is no doubt very difficult to change long-held customs over a short period of time. But by showing respect for tradition it is possible to find new ideas which do not contradict deeply held values and beliefs. The professional who desires to work with food habits, nutrition and public health should believe that there may be much of positive value in tradition and in existing habits of the people, even though they may differ considerably from generally accepted ideas of good nutrition.

Modification of food habits is possible through gradual cultural change. In conclusion the professionals and planners are requested to consider the following valuable statement made by Paul (1955).

*A celebrated malariologist who worked on the Panama Canal project made a remark which lingers in the memory of his public health disciples. "If you wish to control mosquitoes," he said, "you must learn to think like a mosquito. "The cogency of this advice is evident. It applies, however, not only to mosquito populations one hopes to damage but also to human populations one hopes to benefit. If you wish to help a community improve its health, you must learn to think like the people of that community. Before asking a group of people to assume new health habits, it is wise to ascertain the existing habits, how these habits are linked to one another, what functions they perform, and what they mean to those who practice them.*

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