Food culture and child feeding practices in Njombe and Mvomero districts, Tanzania

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Abstract

This article explores food culture and child feeding practices, focusing on children below five years among the Bena and Luguru ethnic groups located in Njombe and Mvomero rural districts in Tanzania. In these two societies existing cultural norms, and beliefs related to child feeding focusing on breastfeeding and complementary feeding were investigated aiming at understanding how everyday practices on child feeding are socially and culturally constructed by actors including parents or guardians, thus giving cultural meanings that are attached to everyday realities on child feeding. The article is part of a larger research project whose overall purpose was to investigate the outcome of milk based nutrition interventions involving dairy goat and cattle keeping with the aim among others to improve health and nutritional status of family members, especially children below five years in societies where prevalence of malnutrition particularly undernutrition is rather high. Methods used included participant observation, in-depth interviews, focus group discussions and semi-structured interviews. Findings show that early after birth, pre-lacteal feeds are commonly introduced in both societies and the most common complementary food includes plain maize porridge. On the other hand, milk consumption among children was rather limited. Existing food habits and feeding practices seem to be informed by widely-shared norms and beliefs. However, these culturally established practices do not always meet the current international recommendations on child feeding. Besides, recommendations and nutritional information on child feeding have largely not been used as suggested. This paper argues that, for the successful introduction and implementation of nutrition-based interventions targeting children, it is important to identify and improve upon the indigenous child feeding practices, reflecting existing food habits, food-related beliefs and their meanings.

Key words: Food, culture, children, feeding practices, nutrition interventions, Tanzania

Introduction

In this article we explore the role of local child feeding practices in two rural communities in Tanzania where child undernutrition is – still – prevalent. Local norms and beliefs form part of the contexts into which current nutritional interventions are introduced, and are likely to shape the ways in which local people respond to such interventions. In recent years we have seen increased attention to improving child feeding practices[1] with the aim of reducing child morbidity and mortality.[2] The main focus has been on children below five years since they are considered most vulnerable to health and nutrition problems, particularly in disadvantaged food insecure populations in rural societies.[3] Evidence shows that over one third of deaths of children below five years in developing countries are associated with inappropriate child feeding practices,[4] which is also considered one of the major causes of child undernutrition.[5]

Breastfeeding is a natural way of providing food to the child and is an integral part of the reproductive process; it improves cognitive abilities, reduces infectious diseases such as diarrhoea, and has important implications for the health of the mother, also in terms of family planning.[6] Complementary feeding is a complex set of practices which are considered important for the children, especially from the age of six months onwards when breast milk alone is not sufficient to meet the child's nutritional requirements. It involves components such as timing of introducing food, choices of food, dietary diversity, and methods of food preparation, quantity, and feeding frequency.[7]

The importance of improving child feeding practices informs the strategies implemented by the World Health Organization (WHO) and United Nations Children's Fund (UNICEF) in supporting, promoting, and protecting appropriate breastfeeding and complementary feeding practices for achieving healthy growth, better nutritional status and child survival during the early stages of life.[8] However, food intake is a response to both biological and cultural stimuli,

and what people eat is largely determined by preferences and habits which are culturally defined and socially acquired – most often through early experience in an individual's lifespan.[9] Culture shapes values and norms on feeding practices and influences parents' choices of a child's dietary intake. As a result, there is great cultural diversity in food consumption and food related practices, which are regulated by multiple factors that vary between societies and among different ethnic groups. Nevertheless, in-depth information on traditional child feeding practices remains limited, and most of the interventions aimed at improving feeding practices and children's health and nutrition have paid little attention to the social and cultural contexts of child feeding. In fact, there has been little in-depth exploration of the cultural beliefs, norms and values of different ethnic groups regarding child feeding practices generally in Tanzania as evidenced by some studies[10], which are largely informed by a nutrition-centered perspective.

Thus using the actor social constructionist perspective this article explores food culture, norms and beliefs related to child feeding, and examines different cultural meanings that are attached to child feeding practices in rural Tanzania. The focus is mainly on breastfeeding and complementary feeding among the Bena and the Luguru ethnic groups, located in Njombe and Mvomero district respectively. In both districts nutrition interventions focusing on dairy goats/cattle keeping implemented at household level. The article comes out of a larger research project, whose overall purpose has been to investigate the contexts and outcomes of the milk-based nutrition interventions especially among vulnerable groups such as children below five years. Cultural beliefs and cultural practices influence food habits. It is therefore essential to understand how traditional food habits and symbolic meanings assigned to food and child feeding are constructed among actors in these two different societies.

We further examine how child feeding advices recommended by the World Health Organization (WHO) /United Nations Children Emergency Fund (UNICEF) and the Tanzania Governments fit into the existing cultural norms and practices at household level in the two study areas. Since milk based nutrition interventions involving dairy goats and cattle are being implemented in both localities, gaining evidence on how milk, in particular, is utilized at household level is important in order to understand every-day child feeding practices as well as the local and culturally specific meanings attached to both dairy milk and mothers' breast milk in the study areas. Here we argue that such information is essential for understanding the complex ways in which social norms, cultural symbols and economic realities underlie food habits in different societies. Furthermore, understanding cultural meanings attached to food and child feeding is essential for integrating science-based knowledge, local concerns and cultural values as a means of improving future health and nutrition interventions.

The two milk-based nutrition interventions discussed here involved the introduction of dairy cattle and dairy goats respectively in Njombe and Mvomero district. One of the objectives of these interventions was to improve child feeding practices through increased provision of dairy milk in children's complementary diets. Thus, implementation of milk-based interventions at household level in these two societies is based on the premise that increased milk production and availability of milk products will increase its consumption, hence improving the intake of complementary feeding, especially essential nutrients from milk.[11] Milk is a source of food which is nutritionally rich in macronutrients (carbohydrate, protein, and fat) and essential micronutrients (minerals and vitamins) that are often limited or unavailable in the local diet, especially for children below five. When sold, milk can also increase income at the household level, thus further providing opportunities for improving nutrition through purchase of nutrition rich foods. Availability of milk is assumed to promote

specific changes in food consumption which yield benefits in child survival[12] and increased household food security.[13] Moreover, it is commonly assumed that local people will have knowledge about science-based child feeding recommendations and comply with them if possible. However, this may require changes in cultural preferences and established practices, which tend to take time.

Our assumption is that food consumption patterns around the world are influenced by many factors resulting from diverse and competing considerations, in the context of rich and locally meaningful cultural practices, norms and beliefs.[14] Important in this regard are the studies by various authors who show that food practices have a cultural background which serves to express group identities and cement social bonds.[15]

Problem definitions and recommendations on child feeding practices

Inappropriate child feeding is considered to be one of the major causes of childhood under-nutrition.[16] An estimated 13 percent of all childhood deaths in low-income countries could be prevented if child feeding practices changed, and in particular if breastfeeding increased.[17] Sub-optimal feeding is further linked with numerous negative health outcomes. International organizations including UNICEF, FAO and WHO in collaboration with national governments have directed their efforts towards scaling up nutritional interventions to improve child feeding practices, thus reducing problems such as child under-nutrition in early days of a child's life. These strategies include the initiation of breastfeeding within one hour after the child is born, followed by exclusive breastfeeding for the first six months, and continued breastfeeding for an additional 18 to 24 months or beyond, along with complementary feeding.[18] Other measures are directed towards improving complementary feeding[19], and focus on improving the quality of food given to children. Evidence shows that at about six months of age, the supply of energy and some specific nutrients in breast milk is no longer adequate to meet an infant's

requirements.[20] Consequently, at this age, introduction of complementary foods, preferably those with a relatively high energy and nutrient density is recommended. According to the WHO recommendations, a minimum amount of dietary diversity should be introduced from 6 to 23 months, together with minimum meal frequencies, to secure the required nutrient content.[21]

As in many sub-Saharan African countries, Tanzania is implementing programmes based on global recommendations on child feeding practices, and is using indicators recommended by WHO and UNICEF.[22] In most parts of the country, mothers often practice breastfeeding even beyond the 24 months of breastfeeding recommended by WHO.[23] However, the 2014 report by the United States Agency for International Development shows that only 57 percent of children in Tanzania are initiated to breastfeeding one hour after the child is born. No more than 41 percent are exclusively breastfed in the category of children under 6 months, while only 14 percent of children at the age of 4-5 months are exclusively breastfed.[24] Over 130,000 deaths are estimated to occur every year among children below five years in Tanzania because of poor feeding practices[25] – which include breastfeeding and complementary feeding. It has been shown that Tanzania is one of the ten sub-Saharan countries most affected by chronic under-nutrition, which may also be attributed to poor child feeding practices.[26] In fact, four out of ten children are stunted, despite several awareness campaigns and advocacy by health practitioners in health centers and hospitals who promote early breastfeeding initiation, followed by exclusive breastfeeding for six months.[27]

Food Culture and the Social Construction of Child Feeding Practices

Many authors have sought to define food culture as well as understand what actually constitutes 'food' in different societies.[28] Food culture, also known as *food habits* or *foodways*, is significant and unique to humankind and refer to the process involved in how humans use food. It includes how food is selected, obtained, distributed; who prepares, serves and eats food. [29] As a concept, food has been defined in various ways. In general nutritionists define food in terms of its nutritive value, [30] while social scientists tend, instead, to emphasize its cultural dimensions[31] indicating cultural meanings that relate to different types of food consumption in different societies; meanings which are socially constructed by actors as they engage with the world they are at the same time interpreting.[32]

It has been argued that, when a new idea is introduced in a society, such as using dairy milk in child feeding, those who believe that in this way they are likely to improve health conditions or prevent ill health problems such as child under-nutrition, are more likely to include the new food item in the household diet.[33] However, in all human societies, beliefs and practices related to food consumption and ill health can be seen as a central feature of culture. Food and eating tend to be symbolic of a particular social order, which in turn is related to what is classified as – socially and culturally appropriate – food.[34] This means that new ideas and changing practices may not easily be adopted if they are perceived to be incompatible with social norms or accepted food habits. As argued by Marcel Mauss, food is a "total social fact", including ways of acting, thinking and deciding about what type of food to eat, [35] which in turn involve individual feelings in relation to eating certain types of food (e.g. dairy cattle or goat milk).[36] Following Mauss, food has been described "as a set of rules of behavior and a system of communication; a body of images and flavors that refers to a system of usage linked to social context and social occasions".[37] A socio-cultural perspective implies that food is seen as much more than as a set of products with biochemical qualities and a certain nutritive value that may be utilized by

humans to sustain life.[38] It has been argued that food is both the "substance and symbol of social life".[39] Thus, it is both a means to satisfy the most basic of human needs, as well as a system of meanings that is central to child health, nutritional status, growth and development.[40] Furthermore, it is a central element in socializing a child; providing it with early consumption habits, certain values within a specific context of cultural meanings, and in this way also a basic element of a social and cultural identity.[41]

Along these lines, we have in this study taken a social constructionist perspective in our exploration of how meanings related to child feeding are expressed and interpreted by parents or guardians as they engage with their children, their family, and the world around them. Through meaningful social interactions and interpretive processes, social actors including parents and guardians creatively shape the reality of their daily practices[42] – in our study areas; this includes decision-making and alternative uses of dairy cattle or goat milk. Such a social constructionist perspective served as an entry point when gathering data on cultural meanings and for linking food habits with meanings attached to child feeding practices. It also served as a basis of the quest to understand how people, as social and cultural actors, conceptualize, behave and respond to situations where nutrition interventions such as milk-based nutrition and health interventions are being implemented at household level in rural Tanzanian villages.

Through social practices, and drawing upon available and accepted local knowledge, parents construct and interpret meanings that are related to child growth and child feeding. [43] But our perspective also implies that actors are linked through networks of actors that produce interpersonal and collective social worlds. In these contexts, actors will also improvise and experiment with old and new elements, getting new experiences within changing circumstances.[44] Child feeding practices are understood to be part of these social processes, and the meanings and justifications related to child feeding are likely to be constructed in different ways in different contexts, in as far as they are shaped and imbued with social values, norms

and assumptions. Thus, child feeding is also a product of human interactions, rather than being the product of culturally informed individual thought, and depends on what people perceive to be the social reality at a particular time and in a particular situation. At the same time, deciding what to eat and what to give to a child depends on a complex of competing considerations, which vary from one society to another depending on both biological and cultural stimuli, where considerations such as personal preferences, pleasure, taste of food, and convenience – including food prices, skills, and availability of food – are involved.[45]

In this paper, social parameters related to child feeding include patterns of social networking and interaction within family and community in the Bena and Luguru societies. Household structure in terms of roles, hierarchy of influence, and decision making related to child feeding – including breastfeeding and complementary feeding – within households in both Njombe and Mvomero districts have been discussed in more detail in another published article.[46] Furthermore, local actor's perceptions of milk based interventions is addressed in a separate article, while this article concentrates on cultural dimensions and the cultural variation we find between our two study areas with regard to ideas, symbols, norms, beliefs, rituals, and cultural meanings related to food and child feeding practices.

Methodology

Njombe and Mvomero districts in Tanzania were selected for this study because they are sites for on-going milk-based interventions implemented in a partnership between the Sokoine University of Agriculture (SUA) and the Norwegian University of Life Sciences (NMBU). In Njombe the project villages include Kichiwa, Maduma, and Ibumila in Makambako Division, and Magoda in Uwemba Division, while in Mvomero District the project villages include Tchenzema, Bunduki, Langali and Kibaoni in the Mgeta Division.

Most of the Bena living in Njombe District inhabit the high plateau of the southern highlands zone on Tanzania.[47] Like many other ethnic groups in rural Tanzania, the Bena are smallholder farmers practicing subsistence farming using the hand hoe as their main tool of cultivation. Field crops such as maize and potatoes are grown in upland areas, and the valleys (*vinyungu*) are often used for vegetable growing. Other important crops which are grown for food and income include round and sweet potatoes and a locally grown tuber called *numbu* (*Plectranthus esculents*). Use of animal protein is generally low, although some households keep guinea pigs (*simbilisi*) as a source of animal protein, food and income. The main staple food among the Bena is *ugali,* a stiff porridge made from maize, the main food crop in the area.[48] Most of the households eat *ugali* with green vegetables as their main meal, while a softer, more diluted maize porridge is normally used for complementary feeding of children below one year.

The Luguru forms the main ethnic group in Mgeta division, in Mvomero District. They are one of the relatively few matrilineal societies in Tanzania, occupying areas high up in the Uluguru Mountains, characterized by steep slopes, and close to forest reserve areas in the mountains. The Luguru area is relatively densely populated, and population growth have caused land scarcity and declining soil fertility within the area.[49] The pressure of people on land has led farmers to shorten the fallow periods and to open the forest reserve and steep land for cultivation. The result has been land degradation and lower yields, with decreasing food self-sufficiency. The decreasing level of subsistence food production at household level may also have had negative impact on child nutrition in the area.[50]

The current farming system in Mgeta is characterized by a combination of agriculture and livestock production involving indigenous goats as well as introduced dairy goats. Most households use the hand hoe in farming the various crops cultivated in the area, which include maize and vegetables of different types such as cabbage and tomato, combined with some rearing of sheep, goats and poultry. The most common food crops in the Luguru society are

maize, yams and taro. The sale of vegetables provides an important source of income which enables the people to buy maize. People in the area use wild (indigenous) vegetables for home consumption rather than "exotic" vegetables they cultivate, which are largely produced for income generation.

Study design, sampling and methods used

These findings are based on a preliminary phase of fieldwork conducted in both Njombe and Mvomero districts from June 2010 to December 2010, followed by the main period of field work from July 2011 to August 2012. Qualitative data collection involved using various methods including participant observation, focus group discussions, and in-depth key informant interviews. Other methods used included semi-structured interviews. Before data collection started, parental consent was obtained in both societies, in addition to the necessary official ethical permits to conduct the study.[51]

Participant observation was carried out in 16 purposely selected households (eight dairy keeping and eight non-dairy keeping households) in each district.[52] This enabled eliciting cultural meanings attached to food habits, beliefs and child feeding practices. Researchers – primarily the first author of this article – participated in various household activities including taking part in household activities such as cooking, farming, fetching water and firewood, pounding maize with parents/guardians attending village meetings and other gatherings such as celebrations. Children were observed in selected households during the day and at night. Furthermore, children were followed to their playgrounds to see whether they had anything to eat. We noted what the children ate, and where and with whom they spent time. Twelve focus group discussions focusing on child feeding practices including both breastfeeding and complementary feeding were conducted in each district (in total 24 discussions), using different groups of villagers based on their age and gender (women, men, young, old). In addition, key

informant and in-depth interviews were carried out with elderly men and women in the study villages, more interviews involved community leaders, and health practitioners from nearby health facilities. Besides, traditional healers, traditional birth attendants, guardians, grandmothers, mothers in different age categories were interviewed. In most cases discussions and interviews were tape-recorded (with their consent) and later transcribed for analysis.

Child Feeding Practices in Njombe and Mvomero

Newborn babies bring happiness to most of the families and households in both Njombe and Mvomero. At the same time, in-depth interviews with mothers showed that there are not only individual concerns associated with children and childbirth; mother have to relate to certain taboos, social restrictions, and specific norms concerning the first food given to newborn babies. The reasons given include protecting children from evil spirits, but also the need to give the child an identity as belonging to a particular clan through culturally defined feeding practices.

Breast-feeding practices and libinda as "first food" in Njombe District

In-depth interviews and focus group discussions with mothers, traditional birth attendants, and grandmothers in Njombe revealed that the initiation of breastfeeding is usually delayed; thus it is not initiated within one hour of birth. This corresponds with findings from earlier studies conducted in Tanzania. For example, based in a study conducted among the Gogo ethnic group in Dodoma district early initiation of breastfeeding was not common.[53] In this study we further found that exclusive breastfeeding is hardly practiced at all in the two study areas, though mothers are expected to breastfeed for two to three years. Some studies have, however, reported exclusive breastfeeding, for example, among the pastoral Maasai in Simanjiro[54] and among agropastoralist households in Igunga district[55] suggesting the diversity of child feeding

practices in Tanzania. However, generally, a more recent study shows that in Tanzania exclusive breastfeeding for the first six months is not widely practiced.[56] More specifically, the study shows that only 50 percent of infants under 6 months are exclusively breastfed which, however, is an improvement compared with 41 percent reported in the 2004-05 study.[57]

Among the Bena, a mother has traditionally been segregated from other family members till she is declared “clean” and regains her “energy”, and she will not breastfeed until a few days after birth. This is believed to enable the child to get “clean” milk. In-depth interviews with the Bena mothers revealed that the belief that the first milk is “not clean” is closely linked to the body’s process during the postnatal period, when the uterine involution takes place. As such, a Bena woman is expected to take her clothes and go to a nearby river where she will take a bath and clean herself; she would continue to do so for some time until she becomes “clean” as indicated by postnatal involution. This experience was narrated by one of the women, who participated in a focus group discussion in Magoda, when she said:

> *"I used to sleep down the floor with my children after every child’s birth since I was not clean. I could take my child to a nearby river where I could take a bath and wash my clothes. Nobody would touch me or my children though some relatives were helping with the cooking".*

Elderly women, mostly close relatives such as the mother-in-laws, are assigned roles of care giving to the newborn baby and the mother during this period, while relatives help with cooking and care in general. Elderly women are often concerned with making sure that traditional practices are maintained. Interviews with mothers and grandmothers in Magoda village indicate that a high proportion of parents still follow the practice of giving *libinda* to the child as their first food. This pre-lacteal food is a mixture of bamboo juice, maize flour, bee honey and pumpkin seeds, which is used to make a soft and sweet porridge, that’s fed to the child by the paternal grandmother (FM), using a finger. Among the mothers interviewed, several have begun

to question such traditional practices, but they recognize that grandmothers are traditionally powerful in ensuring that they continue the practice. Nevertheless, in-depth interviews revealed that social interactions and new information gathered from people outside Njombe district have introduced new ideas and practices that are beginning to change the people's mindset and their own practices.

Since this is a patrilineal society, children belong to their father's clan and are subject to its norms. Some informants explained that babies who are born into a very hungry clan "need to eat something" the day they are born. To "eat something" in this society usually means to consume the maize porridge called *ugali,* the staple food in the area. Thus, in addition to *libinda*, a very soft maize porridge is given to the newborn child the day it is born. The amount the child gets depends on whether or not the child belongs to a "hungry clan", that is, one whose children exhibit high appetite for food from the first day. In an in-depth interview one of the mothers in Magoda village said:

> *"I did not see my own child the first day after delivery. It is my mother-in-law who was taking care of him. She told me that children born from their clan are normally very hungry − therefore my son was given a soft porridge the first day by my mother-in-law".*

In addition to food, children are given some special herbs. As told by a woman who participated in a focus group discussion in Magoda village:

> *"In our society every clan has its own traditional herb which is commonly given to a child after birth and could also be given as a sign of stopping breastfeeding. This is known as "yafyoto".*

After delivery, the mother is normally given soft *ugali* and green vegetables with special pumpkin seeds (*ndendele*), and ground cannabis seeds (*bangi*) and its flour (*luhavi*). The cannabis seeds are normally ground and mixed with green vegetables. These are believed to

have oil which provides energy to the mother's body, and increases her milk supply. This food is also given to the mother to prepare her for breastfeeding the child. Both observation and in-depth interviews indicated that breastfeeding is normally delayed for one to two days. But there is no specific norm on how much time should pass before the mother initiates breastfeeding.

An in-depth interview with a grandmother in Magoda village showed that the belief that in the early postnatal period, a woman is not clean, means that she needs to be segregated from other members of the society so that she does not contaminate them. For this reason she is not allowed to cook or visit neighbors, even after she has initiated breastfeeding. She is also not allowed to give food to her other children and household members. Normally, a room or special place is prepared for her after delivery, and she will stay indoors, sometimes for up to two or three months after delivery, depending on the family's circumstances.

In-depth interviews with younger mothers revealed that the belief that they are polluted and not "clean" after delivery is still very strong among the Bena. Traditional herbs, locally called *mugoda*, are prepared for the mother before she starts touching utensils or resuming duties in her home. A special type of *mugoda* (known as *mafikho*) is given to all members of the family and neighbors who normally come to visit the new mother. This remedy is considered necessary for the woman to resume activities such as cooking and giving food to her family and other people close to her, as it is believed that she will be "clean" after using the *mugoda.* The process of letting the mother resume duties within the household after delivery is known as *kumlehedzya umwana,* which means setting the child free from any harmful environment or evil spirits.

"Hot" breast milk and "first foods" in Mvomero District

In-depth interviews with mothers involved in this study in Mvomero, indicated that some had home deliveries and were attended by close relatives including mothers, grandmothers or close

friends; others were attended by trained health personnel or by traditional birth attendants. In practice, this means that women who give birth at home are less likely to adopt the guidelines which the health personnel try to promote concerning e.g. early initiation of breastfeeding. A woman from Nyandira village explained in an interview:

> *"In our society, we believe that a woman who gives birth at home is a very strong woman and respected too. How could somebody go to a person she doesn't even know? You need to know a person very well for her to assist you during the process of delivery".*

Moreover, among the Luguru in the Mgeta area it is widely believed that hospital services should only be used when complications occur. As a result, the majority of mothers deliver at home, feeling very proud that they manage it themselves or with the support from relatives. With home deliveries, the recommendations of health personnel concerning child feeding, the first hours after delivery are less likely to be observed by mothers. With respect to breastfeeding, in Mvomero like in Njombe District, our study found that the child is not breastfed immediately after birth. In fact, colostrum is emptied and discarded because it is believed to be very "hot" and thus harmful to the child. On the other hand, in Igunga District in Tanzania colostrum was considered bad because, among others, it looked yellow, sticky and dirty.[58] But in both study areas, local beliefs about the special properties of the colostrum means that it is usually not given to the newborns thus depriving them of its positive health effects.

Among the Luguru, the study found that the newborn baby is fed a very soft diluted porridge almost immediately after birth. Like among the Bena, it was evident through observation and discussions with parents that exclusive breastfeeding is not practiced by the Luguru. In a focus group discussion with elderly men and women in Nyandira village in the Mgeta division, it was stated that:

> *"During the early days of the postpartum period the mother's breast milk is often very hot, particularly just after delivery, and it causes problems to the newborn child. Usually, after the child is born and some hours later a small amount of food is prepared to avoid the child from crying because of hunger. It is also normal that the child would cry because she /he get problems because the mother's breast milk is not always enough. For this reason the child is given food the day it is born, and normally the child is given soft ugali, in small amounts… using a finger so the child can taste it slowly... This ugali is normally called "ng'anamwiko" and is the first type of ugali for the child".*

The first *ugali*, known as *ng'anamwiko* or *ugali wa mwiko wa mila na desturi* is normally given by a very close relative of the father, such as the grandmother (FM) or grandfather (FF), before other people come to hold the baby. This is meant to ensure the child is safe and well protected against evil spirits. Other reasons for giving the child *ng'anamwiko* were given in a focus group discussion with elderly men and women in Nyandira, as follows:

> *"Once the child is born, confirmation that the child belongs to the father's clan has to be made. For that reason the mother has to confirm who the father of the child is by allowing the father to give the first ugali to the child."*

The participants in the focus group discussion insisted that it is a very important practice. In this way the identity of the father is confirmed, and this is why the father is the first person expected to hold the child, and not anyone else:

> *"By giving ng'anamwiko, the child is confirmed to belong to an identified father's clan. This is also why there are different types of ng'anamwiko*[59] *differentiated depending on which clan a child belongs to".*

In a focus group discussion with only elderly men in Nyandira, it was stated that there is also a *second ugali,* known as *ugali wa bambiko,* which is normally mixed with indigenous herbs used as remedies/medicine (locally referred to as *tzyidawa)*. One man explained:

> *"Tzyidawa, the remedy in bambiko is called "mkongi" and it contains vitamins; thus, even though the food is cooked for the child and is meant for children, an adult would like it if given to eat or taste because of the vitamins that it contains, which are spiced and attractive".*

The participants further said that there is a *"*therapy management group*"* in the Luguru society, which is responsible for finding the special herbs required for the preparation of different types of *ng'anamwiko*[59] from a place known as Lukwangule in the Uluguru Mountains. With the right herbs given to the child in the first food, it was explained by one of the parents in a group discussion that,

> *"... It is believed that ng'anamwiko protects the child and also enables the mother to recover, before she starts breastfeeding, since it is also believed that the mother's first breast milk is hot, and it is not seen as conducive for the new born child's health".*

Thus, to summarize, *ng'anamwiko* is given both as a first food, for protection against evil spirits, and to communicate the child's identity where he/she belongs to his/her father's clan.

Besides avoiding feeding the baby with colostrum, the Luguru in Mgeta also have remedies to ensure that the breast milk is "not hot" when breastfeeding starts. This process involves giving the mother herbal remedy (*tzyidawa*) such as *kinzasa, kisasang'oo* or *kisasu* to ensure that her breast milk is good for the child. This practice is enforced through a widely held belief that if the mother fails to take the herbal remedy (*tzyidawa*), the child's health will be threatened,

while it is believed that the child who breastfeeds after the mother has taken this remedy/medicine will be healthy.

Symbols of social life for newborn babies in the Luguru society

Seven days after the child is born it is expected that the child's umbilical cord will be removed. This is a very special event among the Luguru in Mgeta; it is when the child is given her/his name, and the mother is allowed to appear in public with her child. The mother then sits with her child in front of the main door of the house. During this process the child is given another type of food, a porridge which is a mixture of maize flour, yam, cassava, banana and African eggplant, called *nyanya chungu*. This mixture is boiled together and put in a special traditional pot. This time, depending on the gender of the child, it is either the maternal grandmother (MM) for girls, or maternal grandfather (MF) for boys, who gives the child this particular food. He or she also shows the newborn child some tools, saying words such as the following:

> *"Your mother has been eating this type of food and it is safe. So when you are eating don't be shocked, don't be surprised, don't be sick, and your abdomen should not be disturbed".*

The tools shown to the baby are the same, regardless of the gender of the child. They include a '*shoka'* (axe) and '*panga'* (machete), tools that the child will grow up with, and which indicate that one day he/she will bring firewood for cooking food. A j*embe* (hand hoe) and *fyekeo* (grass cutting sword) are also held up, signifying that the child will one day become a farmer who will clear bushes, cut grasses, cultivate crops, and bring food home. The child will be shown a *koleo* (spade) to signify that she/he will take animal manure to the field to fertilize the soil. The grandmother or grandfather also prepares a special traditional herbal medicine which contains *mvuje,* herbal plant which is often used as a traditional medicine and is mixed with *majani ya*

kitunguu saumu (garlic leaves) in a Luguru society. This medicine is put in a piece of black cloth and later tied around one of the child's arms or put around his/her neck. This signifies that the child is protected against evil spirits and several diseases, specifically against *degedege* (convulsions). According to local beliefs, a newborn child would suffer from convulsions if not protected in this way.

The ritual aspect of early feeding practices

In Mary Douglas' *Purity and Danger* a framework is provided for understanding several aspects of food and eating, especially the social significance of food.[60] Her concept of "pollution" can be used to analyze social practices, including rules related to eating in many societies. The Bena's belief about mothers being polluted after childbirth is clearly related to ideas of danger to both the child's health and to other people during the postnatal stage. In Turner's terminology, this is a "liminal phase".[61] In the Bena society the liminal phase requires ritual cleansing of the mother and the state of pollution is also believed to affect the quality of the mother's breast milk.

Among the Bena, both segregation and special food are used as ritual practices in the liminal stage to enable the mother to take up her duties and return to being accepted as a member of society. During this period, certain elements in traditions that are culturally defined important are expected in all societies.[62] We found that after delivery of a baby, among both the Bena and the Luguru, there are critical moments of transition which all societies in some way or other ritualize, often as a way of dealing with threats of danger to the child and fears associated with diseases or even death. Unlike the Luguru who allow the mother to appear in public seven days after delivery, Bena mothers normally take more time before appearing in public. The cleansing

period reported above in the Bena society is characterized by the limited role that mothers play in taking care of their children, including preparing meals for them during the postnatal period.

Among the Luguru, traditional foods are regarded as the "substance and symbol of social life", [63] and are given a prominent role in local ritualized practices after childbirth. It should also be noted that substances with important cultural properties, such as *libinda* among the Bena, and *ng'anamwiko* among the Luguru, are all derived from plants. Neither breast milk nor other milk-based products have been given a symbolic value to signify protection, identity, social belonging or future health in these societies. Breast milk is considered necessary, but it is not celebrated as having any particular cultural or social value in the study areas. This is an important aspect of the cultural contexts into which the milk-based nutritional interventions have been introduced.

Milk and complementary feeding of infants

In this study we found that most of the children in the study villages were given what is culturally defined as "normal" types of food very soon after birth. Some newborns are given plain maize porridge the day of birth. They are also given special traditional foods which include *ng'anamwiko* and *bambiko* to avoid "hot" breast milk from the mother (in the Luguru society), or *libinda* and *yafyoto* (in the Bena society) since the postpartum mother is believed to be "unclean". But the main food, the food which transforms newborns into social human beings, is the society's staple food, the *ugali.*[64] in these cultural settings, the concept of "complementary feeding" thus takes on a somewhat different meaning. In cultural terms, it seems that breast milk is complementary to normal food during the early years.

Participant observation, focus group discussions and in-depth interviews revealed that dairy milk provides a significant source of income for dairy keepers, but is hardly used as a

complementary food or added to other food items in the diet of children. Also, the income obtained from milk sales is normally not used to buy food for under-fives; instead it is used for other purposes such as school fees, buying seeds and housing construction.[65] Thus, income obtained from milk is mostly not prioritized for food consumption.

Conclusion

Breastfeeding is internationally recognized and promoted as the best method to feed a newborn.[66] Globally, WHO recommendations on exclusive breastfeeding for six months, combined with complementary feeding thereafter are promoted as the most effective way to achieve healthy growth and development among children.[67] It is generally assumed all over the world that babies are first fed with breast milk from their mothers, or otherwise with a milk substitute. The primary function of breast milk is that of meeting the infant's dietary food requirement, and it usually completes the nutritional requirements of the neonate.

However, breastfeeding practices and patterns vary across societies and among individual mothers, depending on their social and cultural context. In this study we found that both the Bena and Luguru societies in Tanzania have cultural conceptions and rituals that "protect" the child from early initiation of breastfeeding. We identified beliefs that the postpartum woman is not "clean" and thus needs to be "cleansed" before breastfeeding; or that a woman is "hot", thus the milk is "hot" and not conducive to the newborn's health.

WHO's recommendations[68] on early initiation of breastfeeding (within one hour after delivery) and exclusive breastfeeding for the first six months of a child's life, have as we have shown, not yet fundamentally changed the practices of parents and guardians in the rural Njombe and Mvomero districts in Tanzania with respect to child feeding. There have been several efforts to improve child feeding practices in Tanzania in order to reduce child morbidity and mortality.[69]

Various nutritional interventions have been implemented in different localities. However, these efforts have not been as effective as expected. One reason may be that most of these interventions have not seriously taken into account the social and cultural context which surrounds child feeding practices at household level.

We have seen that in both the Bena and Luguru societies, rituals connected with the postnatal liminal phase have strong cultural roots. These ritual practices are also important in terms of social acceptance of a newborn as a member of society. In Mgeta, *ugali* is highly valued as "real" food – the staple diet of the people. The first *ugali* fed to a baby confirms that the child's identity is linked to the clan of the father, as well as the social ties with the mother and the mother's family. The belief that *ugali* provides a social identity to the child, and protects the child from evil spirits, also shows the value of this food as a protective element for the child after delivery. In both societies, breast milk is considered important, but there are ambiguous attitudes towards it; the milk must be "clean" or not "hot", and it requires determined action to resolve the "dangers" associated with breast milk.

Participant observation revealed that in spite of dairy milk being available in many households in Njombe and Mvomero as a result of milk-based interventions, milk is hardly used as food for under-fives. Several factors may explain this situation; here we have focused on the cultural meanings of food associated with childbirth and early child development in the two study areas. This article has examined, in particular, the social and cultural contexts which shape local child feeding practices, focusing on the liminal phase when ritual practices play an important role. We need to understand local meanings and contexts in order to design effective health and nutrition interventions. Initiatives which both incorporate and seek to change elements of cultural meanings could play an essential role in improving child feeding practices. In our view, it is possible to combine efforts to improve child feeding practices with seeking to understand the cultural meanings that are attached to these practices. In this regard, we recommend

involvement of local communities in the formulation and implementation of future interventions for purposes of improving child health and nutrition in rural societies such as those described here in the Njombe and Mvomero districts. It is also recommended that similar studies be carried out, covering other societies and different ethnic groups in Tanzania.

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Notes

1. Child feeding practices are defined by Brown et al (1998) as the complex dietary processes which are involved in a child's ingestion of food. While the child feeding process is thought to begin in the womb (Stewart et al. 2013:28) here we are only concerned with feeding practices of a child from the date of birth to the age of five years.
2. Badham, "Ensuring Optimal Breastfeeding and Iimprovements in Complementary Feeding to Improve Infant and Young Child Nutrition in Developing Countries," 1-5.
3. Schroeder, "Malnutrition"
4. Inappropriate child feeding can be identified through child feeding practices indicators as recommended by WHO (2008)
5. Badham, "Ensuring Optimal Breastfeeding and Iimprovements in Complementary Feeding to Improve Infant and Young Child Nutrition in Developing Countries,"1-5.
6. Victor et al., "Factors Associated with Innapropriate Complementary Feeding Pracices among Children Aged 6-23 Months in Tanzania,"545-561; Thairu and Pelto, "Newborn Care Practices in Pemba Island (Tanzania) and their Implications for Newborn Health and Survival."
7. Njai and Dixey, "A study Investigating Infant and Young Child Feeding Practices in Foni Kansala District, Western region, Gambia," 71-79; Stewart et al, "Contextualizing Complementary Feeding in a Broader Framework for Stunting Prevention," 27-45.
8. Daelmans et al, "Designing Appropriate Complementary Feeding Recommendations,"116-130; Jones et al., "World Health Organisation Infant and Young Child Feeding Indicators and their Associations with Child Anthropometric," 1-17;

9. Belasco, *"*Food ; Fieldhouse, *Food and Nutrition*
10. Shirima et al.," Information and Socialeconomic Factors Asociated with Early Breastfeeding Practices in Rural and Urban Morogoro, Tanzania," 936-941; Hussein et al., "Exclusive Breastfeeding up to Six Month is Very Rare in Tanzania,"251-258; Hussein, "Breastfeeding and Complementary Feeding Practices in Tanzania," 27-31
11. Mtenga and Kifaro, "Dairy Goat Research and Extension at Sokoine University of Agriculture (lowlands) and Mgeta (highlands) Areas of Tanzania," 73-80.
12. Mwangome et al., "Determinants of Appropriate Child Health and Nutrition Practices Among Women in Rural Gambia," 167-172.
13. Wyatt et al., "Dairy Intensification, Mothers and Children," 88-103.
14. Dewey, Cross-Cultural Patterns of Growth and Nutritional Status of Breastfed Infants; FAO, *The State of Food and Agriculture*; Fieldhouse, Food and Nutrition
15. Belasco, *Food*; Insel et al., *Nutrition*.
16. Badham, "Ensuring Optimal Breastfeeding and Iimprovements in Complementary Feeding to Improve Infant and Young Child Nutrition in Developing Countrie," 1-5; WHO and UNICEF, Global Strategy for Infant and Young Child Feeding
17. Ecker et al. "Making Agriculture pro Nutrition in Tanzania"
18. Roberts et al., "Can Breastfeeding Promote Child Health Equity?"
19. Complementary feeding refers to the timely introduction of safe and nutritionally rich foods in addition to breast milk, but could also be understood as a process which involves the gradual introduction of food.
20. Insel et al., *Nutrition*; Bhutta et al., "Evidence-Based Interventions for Improvement of Maternal and Child Nutrition,"; Black et al., "Maternal and Child Undernutrition and Overweight in Low-Income and Middle-Income Countries," 452-477.
21. WHO and UNICEF, Global Strategy for Infant and Young Child feeding; WHO, Indicators for Assessing Infant and Young Child Feeding Practice
22. WHO, Indicators for Assessing Infant and Young Child Feeding Practice
23. Ibid
24. Victor et al., "Factors Associated with Innapropriate Complementary Feeding Practices among Children Aged 6-23 Months in Tanzania," 545-561.
25. Kothari et al., Nutritional status of Women and Children
26. Victor et al., "Factors Associated with Innapropriate Complementary Feeding Practices among Children Aged 6-23 Months in Tanzania," 545-561.
27. Cobham et al., The Child Development Index 2012
28. Curtis, Mark Why Wait Until the Next Crisis
29. Archetti, *Guinea-Pigs, Food Symbol and Conflict of Knowledge in Equador*; 30 Helman, *Culture, Health and Illness*; Mead, *The Problem ofChanging Food Habits*
30. Insel et al., *Nutrition*.
31. Couniharn and Esterik, *Food and Culture;*Archetti*, Guinea-Pigs, Food Symbol and Conflict of Knowledge in Equador*
32. Couniharn and Esterik, *Food and Culture*
33. Kleinman, Patients and Healers in the Context of Culture
34. Caplan, *Food, Health and Identity*
35. Ibid
36. Douglas 1966, *Purity and Danger*; Helman, *Culture, Health and Illness*.
37. Archetti*, Guinea-Pigs, Food Symbol and Conflict of Knowledge in Equador*
38. Kittler and Sucher. *Food and Culture*.
39. Belasco, *Food*
40. Archetti, *Guinea-Pigs, Food Symbol and Conflict of Knowledge in Equador*
41. Caplan, *Food, Health and Identity*

42. Long, *Development Sociology*; Lupton, *Medicine as Culture*
43. Lupton, *Medicine as Culture*
44. Long, *Development Socioly*
45. Belasco, *Food*
46. Mwaseba and Kaarhus, "How do Intrahousehold Gender Relations Affect Child Nutrition?"http://dx.doi.org/10.1080/080339410.2015
47. Nyagawa, *A History of the Bena to 1914*
48. Ohna et al., "No Meal without Ugali?" 3-14
49. Massawe, "Farming Systems and Agricultural Production among Small Farmers in the Uluguru Mountains Area, Morogoro Region, Tanzania; Ponte, Trapped in Decline," 171-183
50. Mwaseba and Kaarhus, "How do Intrahousehold Gender Relations Affect Child Nutrition?"http://dx.doi.org/10.1080/080339410.2015.
51. Ethical permit approval No R.8a/vol. ix/1245 was granted by National Institute for Medical Research (NIMR) to conduct research in Tanzania, while NSD-Norway provided the permit to conduct this research within a progamme at a Norwegian University
52. This sample was drawn from a total of 120 households in each district selected for household interviews. Finding from the total sample is reported in Mwaseba and Kaarhus (2015).
53. Mabilia, "Beliefs and Practices among the Wagogo of Chigongwe (Dododma rural District, Tanzania"
54. Nyaruhucha et al., "Nutritional Status of Underfive Children in a Pastoral Community in Simanjiro District, Tanzania," 32-36
55. Agnarsson et al., "Infant Feeding Practices during the First Six Month of Life in a Rural Area in Tanzania," 9-13
56. National Bureau of Statistics (NBS) [Tanzania] and ICF Macro, *Tanzania Demographic and Health Survey 2010*
57. Ibid
58. Agnarsson et al., "Infant Feeding Practices during the First Six Month of Life in a Rural Area in Tanzania," 9-13
59. There are different types of ng'anamwiko which include ugali wa kamba, ugali wa kimti and mwinika.
60. Douglas, *Purity and Danger*
61. Turner, *Betwixt and Between*
62. Ibid
63. Ponte, "Trapped in Decline," 81-100
64. Ohna et al., "No Meal without Ugali?" 3-14
65. Mwaseba and Kaarhus, "How do Intrahousehold Gender Relations Affect Child Nutrition?" http://dx.doi.org/10.1080/080339410.2015.
66. WHO, Indicators for Assessing Infant and Young Child Feeding Practice
67. Daelmans et al., "Designing Appropriate Complementary Feeding Recommendations," 116-130
68. WHO. Indicators for Assessing Infant and Young Child Feeding Practices
69. Leach and Kilama, Insitutional Analysis of Nutrition in Tanzania

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