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Food Taboos and Preferences among Women of Reproductive Age and Children Under Two in Mainland Tanzania

Photo: Megan Johnson, USAID

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Contents

Acknowledgments

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Acronyms

ANC	antenatal care
CC	city council
CHW	community health worker
CRS	Catholic Relief Services
CSO	civil society organisation
DC	district council
DNuO	district nutrition officer
F	female
FGDs	focus group discussions
g	grams
IDIs	in-depth interviews
KIIs	key informant interviews
LMICs	low- and middle-income countries
M	male
MC	municipal council
mg	milligram
NIMR	National Institute for Medical Research
RMNCAH	reproductive, maternal, newborn, child, and adolescent health
Std	Standard
TFNC	Tanzania Food and Nutrition Centre
ug	microgram
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VEO	village executive officer
WEO	ward executive officer

Food Glossary

Chipsi mayai/Chipsi zege: A popular street food in Tanzania, which is made of French fries (chipsi) and an omelette (mayai/yai) cooked together. The French fries are typically pre-cooked then mixed with beaten eggs and sometimes vegetables such as onions and tomatoes before being fried together to form a thick omelette. Cooks often serve it with tomato sauce and chilli sauce or kachumbari (a mixed vegetable salad made of tomatoes, onions, carrots, cucumber, sweet pepper, and cabbage). Chipsi mayai is a filling and satisfying meal, often sold as a quick snack or breakfast item from street vendors or small food stalls.

Chukuchuku: A main dish accompaniment which is mildly spiced. It can be just boiled vegetables/sardines/beef/beans with only salt and onions; in some cases, cooks may add a little oil.

Kachumbari: A fresh vegetable salad made of either tomatoes, lemon, cucumber and onions or cabbage, carrot and some cooking oil. Pepper can be added to any type of kachumbari. The number of vegetables used to make kachumbari depends on the taste needed. Kachumbari is used to eat ugali, rice, pilau, chipsi or any roasted food.

Kamongo/kambale: Marbled fish

Kiporo: Any type of leftover cooked food that has sat overnight

Makande: A mixture of maize and beans cooked together in a stew-like consistency with spices, vegetables, and sometimes meat. The beans used in makande can vary, but it is commonly made with black-eyed peas or kidney beans. The corn used is usually fresh or dehusked. Other ingredients may include onions, tomatoes, garlic, chilli peppers, and coconut milk. Makande is a filling and nutritious dish often served as a main course with cooked leafy vegetables. It is a staple dish in many households.

Mbaazi/Pigeon peas (*Cajanus cajan*): A leguminous pulse common in many areas of Tanzania, mbaazi is an accompaniment to rice, ugali, cassava, or chapati when cooked in a stew with other ingredients such as onions, tomatoes, curry powder, ginger, garlic, chilli peppers and coconut milk; it can also be eaten as a snack boiled with salt or bicarbonate of soda.

Mbilimbi: Indigenous small fruit often used to give sour or acidic flavour to food, substituting lime/lemon, tamarind, or tomato. Cooks may also use the fruit in making pickles.

Ming'oko: Indigenous root tuber plant (also known as wild yams) famous in the southern coast parts of Tanzania (Lindi and Mtwara). They are boiled before eating. Ming'oko plants climb up around large trees in the forests.

Mlenda (Jute mallow; *Corchorus olitorius*): Mlenda is a Swahili word for a type of green vegetable that is also known as Jute mallow or Nalta jute. Mlenda leaves are known for their high nutritional value, as they are a good source of vitamins and minerals such as calcium, iron, and vitamin C. In Swahili cuisine, cooks often use Mlenda to make a stew or soup, by cooking the leaves with spices, tomatoes, onions, and sometimes meat or fish. It is typically served with ugali made from cassava flour.

Ndago (nutsedge/nut grass; *Cyperus rotundus*): Ndago is the native name of a plant that resembles nutgrass in the Singida region. It is a tuber plant that is dug up and the nuts are extracted to be eaten raw or cooked.

Njugu mawe (Bambara nuts; *Vigna subterranea*): A leguminous pulse commonly used in Kagera, Tanzania, where it is cooked with green bananas, meat, and other ingredients such as onions, tomatoes, and bitter tomatoes. It can also be made into a stew and used as an accompaniment to main dishes like rice/ugali.

Pilau: Also known as pilaf. It is a flavorful/spiced rice dish that is typically made with rice mixed with meat (usually chicken, beef, or lamb); onions; tomatoes; and a blend of spices. The spices used in pilau

can vary, but typically include cinnamon, cardamom, cumin, cloves, and black pepper. The rice and spices are usually cooked together in a pot, with the pre-boiled meat and vegetables added later.

Pilau is often served as a main course, accompanied by a side dish of fresh vegetable salad. It is a popular dish for special occasions and celebrations, such as weddings and holidays. Pilau is sometimes served with kachumbari.

Ugali: Ugali is a staple food made from cornmeal (maize flour), cassava or millet flour or a mix of more than one flour. The flour is mixed with water and cooked until it forms a thick, dough-like consistency (stiff porridge). Ugali is typically served in a large bowl or platter and eaten with the fingers by rolling small portions of the dough into balls and dipping them into a stew or sauce.

It is often eaten with a variety of stews, vegetables, and meat, and is a staple for many people in Tanzania. Ugali is high in carbohydrates and provides a good source of energy, but it is relatively low in other nutrients.

Urojo: Urojo, also known as Zanzibar Mix, is a popular street food dish in the coastal region. It is a flavourful and spicy soup made from a combination of ingredients, including potatoes, cassava, bananas, chickpeas, lentils, and other vegetables. The soup is seasoned with a variety of spices, including turmeric, chilli powder, and cumin, and typically served with a slice of lime and crispy Indian-style snacks known as bhajias.

Urojo is a dish with a long history in Zanzibar, often referred to as a cultural food icon of the island. It is sold in small roadside shops and stalls, as well as in restaurants and hotels. The dish is known for its mix of flavours and textures, with the softness of the vegetables and legumes complemented by the crunch of the bhajias.

Urojo is a nutritious and filling meal, as it contains a variety of vegetables and legumes that provide a good source of fibre, protein, and other essential nutrients. It is also a popular food during the Islamic month of Ramadan, as it is a filling and satisfying meal that can be eaten after a long day of fasting.

Uji wa lishe: Uji wa lishe is a porridge made from adding water to a mixture of grain flours, such as maize, millet, sorghum, or a combination of these, and cooking it. It is served hot and sometimes sweetened with sugar or honey; flavoured with spices such as cinnamon, cardamom, or vanilla; and garnished with nuts or raisins. It is a common breakfast food in many parts of Tanzania known for its high nutritional value. Uji wa lishe is often fortified with vitamins and minerals, such as iron and vitamin A, to provide additional health benefits.

Executive Summary

Background

Inadequate dietary diversity is a challenge in many countries in sub-Saharan Africa, including Tanzania, and it is a key cause of malnutrition in rural farming communities (MoHCDGEC et al. 2016; Thompson and Meerman 2013). This situation persists because most households depend on carbohydrate-rich staples while consuming small amounts of animal products, fruit, and vegetables. Therefore, diets contain insufficient amounts of key nutrients needed for good nutrition and health (Mbwana 2019). Additionally, insufficient amounts of protein in the diet, further depleted by prohibitions that forbid or discourage eating particular foods, can adversely affect the health status of a population (i.e., cause protein-calorie malnutrition in children, maternal depletion, premature ageing, and general malnutrition in women). Studies have indicated that food preference and taboos affect intake of specific foods (World Vision 2020; Chakona and Shakleton 2019). Food taboos affect nutrient intake and hence affect the nutrition situation of the populations.

Maternal malnutrition is persistent in Tanzania, with long-lasting consequences for women, children, families, and communities, which in turn, affects the country's economic growth. Maternal micronutrient deficiencies and anaemia are among the main causes of maternal mortality and generally poor birth outcomes (MoHCDGEC, MoH, TFNC, NBS, OCGS, and UNICEF, 2016).

The government and development partners have implemented interventions to address malnutrition among women of reproductive age and children in Tanzania have, to some extent, improved nutrition status (MoGCWG 2021). However, the nutritional status of women of reproductive age, children, and adolescents have not sufficiently improved as interventions do not address needed social and behaviour change. Embedding cultural influences in understanding nutrition as part of global health has been shown to be important in developing effective health promotion strategies (Edberg 2013). Because culture is affected by, and affects, social contexts, we need to consider social and cultural context together, especially for understanding how food preferences or taboos may affect food intakes. Social contexts are complex and include the socially acceptable standards and customs of groups or social circles within which individuals interact. To understand these taboos and preferences, we conducted a study to identify the food preferences of taboos for women of reproductive age (namely pregnant women, breastfeeding women, adolescent girls aged 15–19 years) and children aged 6–23 months in selected regions of mainland Tanzania.

Methodology

This study covered Mbeya, Dar es Salaam, Mwanza, Kigoma, Lindi, Arusha, and Singida. We employed a purposive sampling procedure to obtain interview and focus group discussion participants. We conducted 25 sessions of focus group discussions with a total of 208 participants. We also conducted key informant interviews (KII) with district nutrition officers, community health workers (CHW), and other community leaders in the respective region. We coded our transcripts and analysed them using MAXQDA software. We obtained permission to conduct this study ethical clearance from the National Health Research Ethics Committee of the National Institute for Medical Research—Tanzania and JSI Institutional Review Board in the USA. Throughout study implementation, we maintained confidentiality and anonymity.

Findings

Our findings indicate that healthy and unhealthy food taboos, restrictions, and preferences exist for certain types of food among specific groups in urban and rural study areas. Unhealthy food taboos, restrictions, and preferences can contribute to a low-quality diet and increase the risk for malnutrition.

Healthy taboos, or those with a positive effect, for pregnant women mostly were associated with positive health outcomes for the mother and unborn baby. For instance, community members prohibit

pregnant women from consuming junk food in both urban and rural areas. Eating junk food too rich in energy is associated with delivering a large baby, difficulty in childbirth, pain from perineal tears, as well as risk of childbirth by caesarean section. Consumption of non-food items such as clay soil, smoking cigarettes, and drinking alcohol is also considered unhealthy and prohibited, especially in urban areas. Respondents believed consumption of clay soil can cause intestinal worm infestations and appendicitis in a mother, while alcohol and cigarettes can affect the health of an unborn baby. However, on the negative side, in rural areas, community members also prohibit consuming certain types of nutritious foods, such as eggs during pregnancy, as this is often associated with the potential for bearing a child without hair.

Similarly, healthy food taboos are a common practice to children under two years as well as postpartum and lactating women. Communities prohibit the consumption of junk food like French fries for children under two years due to its association with childhood obesity. Communities also restrict children's consumption of processed foods like porridge flour and juices because the ingredients used (low in micronutrient density), and the expiry date are unclear.

Furthermore, in rural areas respondents reported that communities restrict adolescent girls from eating uncooked rice due to a belief that this causes vaginal candidiasis. This is a healthy taboo since uncooked rice, in addition to the low micronutrient density, may have adverse outcomes for oral and gut health.

Despite the presence of healthy food taboos, unhealthy food taboos and restrictions based on misconception related to pregnancy, postpartum and lactation as well as adolescent girls and children below two years of age exists both in urban and rural study areas**.**

Unhealthy food taboos, or those with a probable negative effect, can limit adequate consumption of nutrients leading to malnutrition in affected groups. Community members prohibit pregnant women in both urban and rural areas from eating eggs (protein) to avoid them giving birth to a baby without hair, and from restricting to eat sufficient meals because they could cause the baby to become too large to deliver without a caesarean section. In addition, it is taboo for pregnant women to eat kiporo (leftovers) because this will cause them to pass faeces during childbirth. Communities also prohibit pregnant women from eating lemons, as it is believed that this would cause blood thinning and reduce the amount of blood in the body. It is a taboo for a postpartum and a lactating mother to eat hard foods (e.g., ugali, rice) and cold foods (e.g., foods or drinks that are cold in temperature) as this would interfere with bowel movements and milk production. Adolescent girls are prohibited from eating protein foods such as chicken thighs as well as certain types of fish (Kamongo) in rural areas, and goat meat in urban areas, as norms reserve these for parents' consumption.

There are certain taboos that cut across geographies (rural vs. urban), ages, and other demographic characteristics due to their religious significance. The most commonly prohibited food in all regions was pork among Muslims and some Christian denominations. Thus, addressing existing misconception and unhealthy taboos related to nutrition could be important to promote healthy food consumption habits as well as reduce malnutrition-related problems in affected communities.

Preferences for healthy food were common among pregnant women in both urban and rural areas. However, their preference varied based on staple food availability across geographical and climate (season). They mostly preferred to eat food composed of a variety of food groups and tended to exclude junk food due to perceived unhealthy nature. They believe that eating protein foods such as cooked chicken, fish, and meat during pregnancy is a status symbol in that it implies you are well off and are being cared for. In most of the study sites, respondents expressed preferences to consume carbohydrates (stiff porridge, rice, cassava); a variety of proteins (cooked meat or fish, legumes); green vegetables; and seasonal fruits such as mangoes (rich in vitamins and minerals).

Preferences for eating large amounts of French fries (chips) served with fried fish, chicken, and beef was reported among adolescent girls and postpartum and lactating mothers, especially in urban areas, where overweight and obesity is already a problem. For adolescent girls, this stems from the easy preparation, pride, ready availability, socialisation, affordability as well as identity, as consuming these symbolises

wealth, prosperity, or social status. Respondents associated the preferences of postpartum and lactating mothers with ease of preparation, seasonal availability, affordability, good taste/flavour, uniqueness as well as a sense of excitement and happiness from consuming such foods.

We found there are many sources of communication used in different areas which can influence taboos and preferences. The trusted sources of information most commonly mentioned by participants were radio, television, health care facilities, and fliers or posters. Public announcement systems are also used in some places. Health care providers in facilities and community health workers are a great source of nutrition information for many communities.

Conclusion

Variation in food taboos and restrictions related to norms and misconceptions among pregnant women, children, postpartum and lactating mothers, and adolescent girls exists in studied communities in both urban and rural areas. Elderly and peer advice based on the perceived benefit or harm of food items, and in adolescents, socialisation, perpetuates them.

Furthermore, there are existing nutritional promotion interventions targeting pregnant women coupled with healthy food taboos in different places through community health care workers and health care providers. In contrast, the existence of unhealthy food taboos, preferences, and restrictions related to misconceptions, especially for adolescent girls and lactation mothers, implies a missed opportunity to address knowledge gaps with nutritional interventions. Thus, partners and communities must mitigate motivating factors for unhealthy food taboos, restrictions, and preferences to avoid the potential associated negative health outcomes for adolescents, pregnant women, lactating mothers and young children. Promoting healthy beliefs and preferences among women of reproductive health and children would meaningfully contribute to tackling malnutrition and other nutrition-related challenges in Tanzania.

Chapter 1: Introduction and Study Background

This report presents the findings from a qualitative, formative research study on the food preferences of and cultural/religious prohibitions for women of reproductive age, children 6–23 months, and adolescent girls in selected regions of mainland Tanzania. Chapter 1 presents background for the study; chapter 2 outlines the study objectives and conceptual framework. Chapter 3 describes the study design and methods. Chapter 4 presents the findings, followed by the discussion in chapter 5 and the conclusion in chapter 6.

Food Taboos, Preferences, and Nutrition

Inadequate dietary diversity is a key challenge in many countries in sub-Saharan Africa, including Tanzania, and it is one of the causes of malnutrition in rural farming communities (MoHCDGEC et al. 2018; Thompson and Meerman 2013). This situation persists because most households depend on carbohydrate-rich staples while consuming small amounts of nutritious foods such as animal products, fruit, and vegetables. Therefore, diets lack sufficient amounts of nutrients needed for good nutrition and health (Mbwana 2019). On the other hand, insufficient amounts of adequate protein in the diet, further depleted by prohibitions that forbid or discourage eating particular foods, can adversely affect the health status of a population (i.e., cause protein-calorie malnutrition in children, maternal depletion, premature ageing, and general malnutrition in women). In some parts of Tanzania like Shinyanga, caregivers do not give children chicken and meat because they fear that children will develop bad manners in adulthood, and do not want to eat their chickens and thereby reduce the number of chickens at home (World Vision 2020).

Maternal malnutrition is persistent in Tanzania, with long-lasting consequences for women, children, families, and communities which affect the country's economic growth. In addition to the traditional micronutrient inadequacies and underweight in certain communities, there is an increasing trend towards overweight and obesity in women of reproductive age, especially in the urban areas (MoHCDGEC, MoH, TFNC, NBS, OCGS, and UNICEF, 2016).

UNICEF's conceptual framework on maternal and child nutrition lists cultural norms, taboos, and beliefs as one factor that may contribute to malnutrition (UNICEF 2021). Meyer-Rochow findings from India, established that food items within a given ecological zone may be considered inedible due to "nutritional taboos" (2009). Practising communities intend for their food beliefs and taboos to have a positive effect including conservation of scarce or sacred resources; maintenance of social norms, morals, group cohesion and identity; and protection of human health (Meyer-Rochow 2009). Communities often strictly observe food taboos and restrictions in childhood and during pregnancy, and this is especially significant as pregnant women are more vulnerable to malnutrition and other health complications. Community members regulate what they eat to protect the foetus and reduce the likelihood of complicated labour and delivery in Tanzania (Lennox, Petrucka, and Bassendowski 2017). In this case, malnutrition results from the failure to utilise available food resources in a given area due to taboos and beliefs.

Efforts to address malnutrition among women of reproductive age and children in Tanzania through different nutrition interventions have, to some extent, improved indicators associated with nutrition status (UNICEF, WHO, and WB 2017). For instance, at national level, stunting significantly decreased from 34.7 percent (TNNS 2014) to 31.8 percent in 2018. Between 2014 and 2018, a significant decrease of the prevalence of stunting was observed in Dodoma, in Morogoro, in Pwani, in Lindi, in Tabora, in Kagera, in Mwanza and in Katavi (MoGCWG 2021). However, the levels of malnutrition measured remain unacceptably high, including stunting in children (31.8 percent in 2018) and anaemia in women of reproductive age (15–49 years) (28.8 percent in 2018) (PMO 2021). Mothers, school-age children, and adolescents were insufficiently targeted in the *2016–2021 National Multi-Sectoral Nutrition Action Plan*

(NMNAP), even though improving maternal, infant, young child, and adolescent nutrition is critical to stop intergenerational cycles of malnutrition. To improve ongoing nutrition interventions in Tanzania, researchers need to explore and identify enablers of and barriers to positive nutrition behaviours and available interventions, especially methods of delivering nutrition messages, available nutrition promotion information and communication materials, and current food taboos and preferences.

Understanding community taboos around food stuffs and individual preferences in food items is critical to the development of effective nutritional programmes and educational messages. Conducting qualitative formative research to get insights into taboos around food and food preferences among the mothers, children, and adolescents in Tanzania will provide information to help improve vital maternal and adolescent nutrition interventions in Tanzania. The insights gained support the prevention and management of micronutrient deficiencies and integrated management of acute malnutrition by providing education on food taboos and preferences that may affect maternal and adolescent nutrition.

Chapter 2: Study Objectives and Conceptual Framework

Research Objectives

The objective of this study was to identify the food preferences of taboos for women of reproductive age (namely pregnant women, breastfeeding women, adolescent girls aged 15–19 years) and children aged 6–23 months in select regions of mainland Tanzania.

Main Research Questions

The following questions, applied to pregnant women, breastfeeding women, adolescent girls aged 15–19 years, and children aged 6–23 months, guided the study:

1. What are the current food taboos in selected regions of mainland Tanzania?
2. What are the current food preferences in selected regions of mainland Tanzania?
3. What gaps and opportunities in food taboos and preferences may inform targeted interventions to promote appropriate dietary practices in selected regions of mainland Tanzania?

Conceptual Framework

The socio-ecological approach to public health introduced by Bronfenbrenner in the 1970s points out that along with individual environmental changes, multiple systems of interaction shape behaviour and food choices (Mahmudiono, Segalita, and Rosenkranz 2019). Ecological models have incorporated multiple determinants into different levels of influence on behaviour (intrapersonal, interpersonal, organisational, community, and public policy) and consider the interaction of behaviours across these levels of influence, which leads to multi-level suggestions for interventions to effectively change behaviour (Dunneram et al. 2013; Kittler, Sucher, and Nelms 2011).

Eating behaviours are highly personal and complex processes involving the interaction of several factors that impact one's health and nutrition. Such factors include the individual's thoughts and beliefs, their close social environment like family and friends, their physical environment like home or workplace, and the policies which govern the society they live in. The food choices, preferences, and eating habits of an individual are highly variable and many interrelated factors influence them, including social and cultural factors (Witchell and Sheeshka, 2011; Raine 2005; Taylor, Evers, and McKenna 2005). Individuals' cultural upbringing and peers can influence the food choices they make and their interest and opinion of some foods.

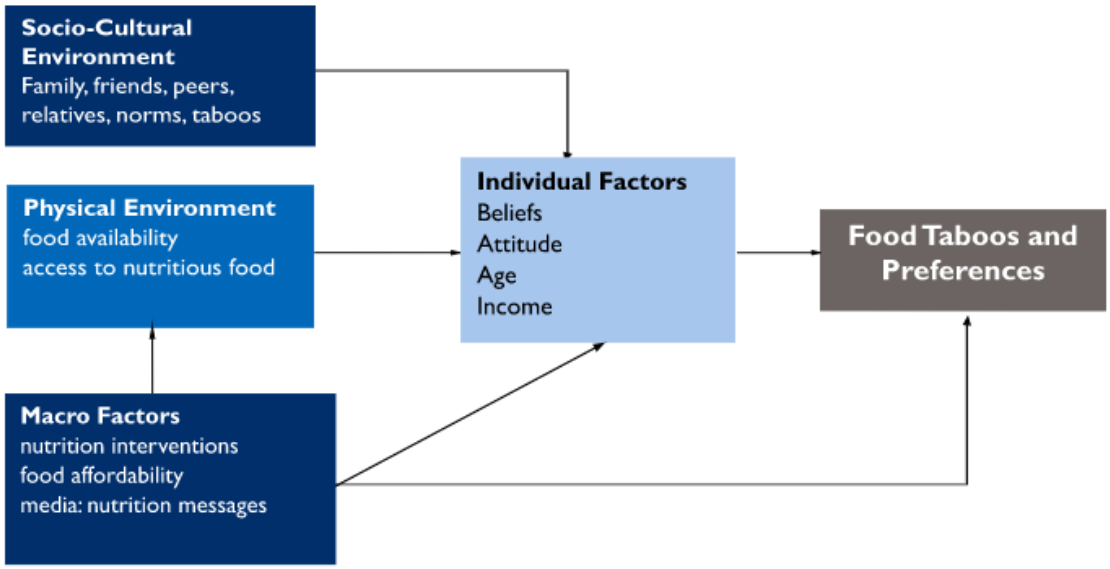
Findings from research using socio-ecological models, like research from Nepal that considered the influence of the physical environment and sociocultural context, show that the most influential determinants of dietary behaviour include—

- cultural practices: gender roles relating to cooking
- social influence: significant others like family and friends
- physical environment: healthy food availability, access, and barriers
- individual factors: gender, age, beliefs, motivations, and capabilities (Caperon et al. 2019).

Embedding cultural understanding of nutrition as part of global health has been shown to be important in developing effective health promotion strategies (Edberg 2013). Because culture is affected by, and affects, social contexts, we need to consider social and cultural context together. Social contexts are complex and include the socially acceptable standards and customs of groups or social circles within which individuals interact.

Social norms and social structures can play a significant role in developing cognitive abilities and defining eating behaviours. Factors such as social norms (informal understandings that govern the eating behaviour of members of society), social structures (e.g., family, communities) and cultural practices/traditions play an important role in food choices and preferences and may act as barriers or facilitators to healthy choices (figure 1).

Figure 1. A Socio-Ecological Model of Dietary Choices



Chapter 3: Study Design and Methods

Study Design

We used a cross-sectional descriptive qualitative study design for this formative research. We used interviews and focus group discussions to gather insights related to food taboos and preferences and identify available opportunities and gaps for maternal, adolescent, and child nutrition in Tanzania.

Target Population, Sampling Procedures, and Sample Size

Target Population

The study primarily involved three categories of women of reproductive age (15–49 years):

- pregnant women
- breastfeeding mothers/caregivers of children aged 6–23 months
- adolescent girls aged 15–19 years.

For triangulation purposes, we included a limited number of key informants in the study to gain an in-depth understanding of the factors influencing food preferences, taboos, and existing gaps in nutrition interventions in the study regions. These included district nutrition officers (DNuOs), community leaders, and representatives of civil society organisations (CSOs) working mainly in nutrition in the respective study areas. In each area, we selected a CSO which had conducted nutrition interventions recently.

Geographic Selection

We conducted the study in mainland Tanzania in one location from each of its seven zones, namely: East (Dar es Salaam), West (Kigoma), North (Arusha), South (Lindi), Southern Highlands (Mbeya), Central (Singida), and Lake (Mwanza). The study team selected one rural and one urban ward in each location to gain more area-specific information. We selected one urban ward and one rural ward; the most urban areas were densely populated and had many socio-economic activities like business, markets, and even shopping malls, while the rural areas were at least about five kilometres away from the town centre. We labelled the results/quotations presented rural or urban for ease of understanding of where the information came from. Table 1 lists the regions where we conducted the study.

Sampling Technique and Selection Procedures

We used a purposive sampling strategy to select participants for in-depth interviews (IDI), key informant interviews (KII), and focus group discussions (FGD) who could provide rich insights into the study questions. The research team selected key informants based on their role in influencing women of reproductive age or giving advice about food practices and dietary norms. Key informants included DNuOs and persons widely known and who can influence others, for example, religious leaders, traditional leaders, or a very well-known community member. Participants for IDIs included people with knowledge of nutrition and maternal health activities or leaders in the selected communities. Focus group discussions were carried out among pregnant women, breastfeeding mothers/caregivers of children aged 6–23 months, and adolescents. FGD participants included people with homogeneous socio-demographic characteristics. Commonalities like age range, makes people more likely to open up and discuss more issues, as compared to mixing younger and older persons. In recruiting study participants, we observed the rural and urban nature of people's behaviours to gauge perspectives on food taboos and preferences.

The research team arrived at regional administrative offices and regional medical offices and introduced themselves; then the nutrition officer took them to the respective district for introductions. The nutrition officer from the district accompanied the study team to respective wards and introduced them

there. The ward leaders were responsible for introducing the team to selected villages and health care facilities for interviews and discussions.

Ward leaders supported the study team in selecting eligible participants for KIIs like influential persons and CSOs and also identified community health workers (CHWs) for IDIs. The CHWs selected significant others, pregnant women, breastfeeding mothers/caregivers, and adolescents for FGDs using their knowledge of families in the community. Local leaders were responsible for securing an appropriate place for conducting interviews and discussions.

Participant Sample and Sampling Strategy

We conducted a total of 25 FGD sessions (9 for pregnant women, 7 for breastfeeding mothers/caregivers, and 9 for adolescent girls) and 69 interviews across study regions. We conducted a total of 12 FGDs in urban areas (5 for pregnant women, 2 for breastfeeding mothers, and 5 for adolescents) and 13 FGDs in rural areas (4 for pregnant women, 5 for breastfeeding mothers, and 4 for adolescents). The total number of participants for the FGDs for this study was 229 (75 pregnant women, 66 breastfeeding mothers, and 88 adolescent girls). Tables 1 and 2 summarise the study FGD sample. FGD sessions had between 6 and 12 participants and took place in the area about which respondents reflected.

Table 1. FGDs Sample by Place and Participant Category

Region	District	Respondent Group			Total Per Place
		Pregnant Women	Breastfeeding Mothers/ Caregivers of Children 6–23 Months	Adolescent Girls	
Mbeya	Mbeya city council (CC)—urban	1 (7 respondents)	-	1 (12 participants)	2
	Busokelo district council (DC)—rural	1 (9 respondents)	1 (12 participants)	-	2
Dar es Salaam	Kinondoni municipal council (MC)—urban	1 (9 respondents)	-	1 (8 participants)	2
	Ubungo MC—rural	-	1 (10 participants)	-	1
Mwanza	Nyamagana MC—urban	1 (9 participants)	-		1
	Sengerema DC—rural	-	1 (9 participants)	1 (8 participants)	2
Kigoma	Kigoma MC—urban	-	1 (9 participants)	1 (8 participants)	2
	Kakonko DC—rural	1 (8 participants)	-	1 (12 participants)	2
Lindi	Lindi MC—urban	1 (7 respondents)	-	-	1
	Liwale DC—rural	-	1 (8 participants)	1 (11 participants)	2
Arusha	Arusha CC—urban	1 (12 participants)	-	1 (9 participants)	2
	Longido DC—rural	1 (6 participants)	1 (10 participants)	-	2
Singida	Singida MC—urban	-	1 (8 participants)	1 (8 participants)	2

Region	District	Respondent Group			Total Per Place
		Pregnant Women	Breastfeeding Mothers/ Caregivers of Children 6–23 Months	Adolescent Girls	
	Mkalama DC—rural	1 (8 participants)	-	1 (8 participants)	2
Total FGDs per group		**9**	**7**	**9**	**25**

Table 2. FGDs Sample by Rural and Urban Participant Category

Place Category	Respondent Group			Total Per Place
	Pregnant Women	Breastfeeding Mothers/ Caregivers of Children 6–23 Months	Adolescent Girls	
Urban	5 (44 participants)	2 (17 participants)	5 (49 participants)	12 (110 participants)
Rural	4 (31 participants)	5 (49 participants)	4 (39 participants)	13 (119 participants)
Total per category	**9 (75 participants)**	**7 (66 participants)**	**9 (88 participants)**	**25 (229 participants)**

The study team selected key informant interviews with DNuOs from every region, selecting one nutrition officer from every region depending on the nutrition status of the district. We conducted about eight interviews with DNuOs. These officers were crucial in introducing the general view of the community they serve and their nutritional aspects. They also shared information from almost every corner of the district, given their role as the overall nutrition officer in the area. We gave preference to those who had worked in the district for at least a year to make sure we obtained relevant data. In cases where we found an officer had been shifted to another office in the same role but had not left, we asked to have conversations with them because they have rich information on the given district. To gain more perspectives on community dietary behaviours, we interviewed influential persons from the respective wards. These five people were either religious leaders or well known in the area.

Significant others we spoke to included male partners, mothers, or close friends of either pregnant or breastfeeding women. These perspectives were sought because of their knowledge of their partners or friends, whose preferences may represent the dietary behaviours of people with the same characteristics in the community. We interviewed 13 people, at least one from each district.

We also carried out other interviews with community leaders who provided an overview of their community and members' dietary behaviours, highlighting preferences, taboos, and nutrition interventions. We interviewed eight community leaders, selecting one in every region. We also

interviewed community health workers to get a breadth of information on the dietary behaviours of the study population. Community health workers work closely with the community in providing health education and identifying health problems among pregnant women and young children. We selected six CHWs to interview based on the remoteness of the areas where they work. In conjunction with CHWs, we also interviewed five CSO representatives operating in study areas to share their views on the nutrition issues and the interventions either carried out by their organisations or others in the community (see participants' characteristics by place in the annex 1; tables 1 and 2).

Table 3. IDI and KII Sample by Rural and Urban and Participant Category

Participant Type	Place		Total per Category
	Urban	Rural	
Significant other	6	7	13
CSO	2	1	3
Community leader	5	2	7
Community health worker	2	4	6
Religious leader	0	1	1
Influential person	1	3	4
DNuO	3	5	8
Total per place	19	23	42

Data Collection Methods

The team collected data using interview and FGD guides developed by researchers based on knowledge of the context and review of relevant background literature. The guides enabled the team to collect data regarding perspectives on food taboos and preferences, barriers for and facilitators of food choices, as well as existing interventions on nutrition behaviours in the community. We developed the guides in English, senior researchers reviewed them, and experienced translators translated them into Kiswahili.

Research assistants pre-tested the tools during the training sessions and later with participants who had similar characteristics to those of the intended study population. The pre-testing exercise took place in Kinondoni municipality in Sinza and Mabwepande wards. This exercise helped the research team to review and refine the tools and the methodology (especially sampling strategy), and identify research assistants' skills to strengthen before the data collection exercise began. We did not include the data from pre-testing exercises in the final analysis.

Study Implementation

We carried out all interview and discussion sessions in Kiswahili, which is the most widely spoken language in Tanzania. All respondents were conversant in Kiswahili. Therefore, there was no need for interpretation during data collection. Participants for FGDs were identified by CHWs or community leaders. We limited sessions for both pregnant and breastfeeding women to fewer than 12 people to reduce the chances of transmitting COVID-19. Breastfeeding mothers carried their children with them during the sessions, though several had someone accompany them to help with the baby. KIIs and IDIs were carried out in a private place which ensured fewer or no interruptions.

The study team recruited eight research assistants and trained them over a five-day period. During this time, we familiarised the research assistants with the tools they would use during data collection. To test the tools, assistants conducted role playing exercises in pairs and later modified them to suit the desired group/individual being interviewed. A following pilot study was done in Dar es Salaam to test and improve on the developed tools. We incorporated observations from the USAID Advancing Nutrition team into the training and carried out all necessary revisions immediately before proceeding to the field.

The implementers of this study were divided into two main teams, each with four research assistants, two supervisors, one coordinator, and one quality assurance team member. The team subdivided the regions into two routes and assigned one field team to each route. The first route covered Mbeya, Kigoma, and Mwanza and the second route spanned from Singida, Arusha, and Lindi. The last route was Dar es Salaam. Each team was led by the field research supervisor and the most experienced research assistant.

The study coordinator facilitated preliminary introductions for the study and informed regional authorities about the visit of the study team. Field supervisors made prior arrangements with regional medical officers, district nutrition officers, and local authorities, who arranged to meet with the groups/individuals being interviewed. Before collecting data, field supervisors also confirmed that the research team followed and met all ethical requirements. This included receiving informed consent and in the case of minors, assent, before conducting the interviews.

Data Management and Processing

Data Management During Data Collection

Researchers established procedures for labelling data before and after collection to ensure it was correctly identified. The session was labelled clearly to identify who was a participant, where their feedback was obtained, and the area characteristic (either urban or rural). An example of session label is: "Session: FGD_Pregnant women_Kitunda_U_Ilala_Dar" to indicate that this session was an FGD for pregnant women in Kitunda ward, which is an urban area in Ilala municipality, Dar es Salaam region. We collected participants' information by inserting their attributes like age and sex in a separate form. This information was preceded by identification of the place where we collected data as indicated in the table below.

Table 4. A Sheet for Collecting Participants' Socio-Demographic Information

S/N	Participant ID	Age [years]	Sex	Occupation	Education Level	Marital Status
1.						
2.						
3.						
4.						

The principal and co-investigator reviewed the audio recordings, notes, and daily field reports. They transferred all audio recordings to a secure folder for electronic storage after every session. Hard copies like notes, participant information sheets, and signed consent forms were kept in opaque envelopes and sealed closed. The supervisors also checked the recordings from the field to ensure quality of both audio recordings and interview notes before uploading them to the computer. Every field

team had one password-protected computer for storing data during data collection. The principal researchers checked written information for completeness and correctness. To comply with privacy requirements, they separated informed consent forms from other written information.

Data Management After Data Collection

The team transcribed audio recordings verbatim into Kiswahili and the researchers who conducted the interview/focus group discussion verified the content. The investigators also reviewed the transcripts for correctness using the recording. Translators then translated the transcripts into English. The investigators then reviewed these transcripts before approving them as final data.

Data Analysis

Investigators used the approved data to create a codebook that aided analysis. Coding and data analysis were iterative processes, which allowed for the emergence of new codes. The team reviewed the transcripts to inform the codebook development. The team completed the coding process using MAXQDA software. Two people coded sequentially to make sure coding was consistent and captured all important information. We used thematic analysis approaches to prepare findings for the report. The team identified common patterns/themes, and created matrices to compare the data across regions.

Ethical Considerations

This study received ethical clearance from the National Health Research Ethics Committee of the National Institute for Medical Research—Tanzania. We also obtained approval through the Prime Minister's Office—Regional and Local Government to conduct the study in respective regions through regional administrative secretaries, the district administrative secretaries, and ward and village/street authorities where we conducted the study. JSI's Institutional Review Board also reviewed and approved the study. The research coordinator communicated with regional authorities, handed all approval documents to the research assistants for submission, and requested permission from the respective areas. We shared important documents for approval of the study with all regional authorities, who forwarded them to lower levels for reference. The study team also carried copies of the approval documents for reference.

For adult participants, we sought written consent before proceeding with data collection. For adolescents aged 15–17 years old, who are legally considered minors, we first sought consent from their parents/guardians, and thereafter, assent from the adolescents. During data collection, two team members were present for interviews/group discussions with adolescents, in line with best practices for safety and security.

Researchers were careful in interacting with the research participants like pregnant women, breastfeeding mothers, and adolescents. They followed all community and ethical guidelines for involving these populations in research. For example, in some regions like Mbeya, we were told, "You cannot ask a woman if they are pregnant." The field team adjusted to the challenge by going to health clinics so they could meet pregnant women. To talk to breastfeeding mothers, the team went to the clinic very early in the morning so we could conduct the discussions and let them obtain their clinic services on time. Researchers not only received consent from these participants (or assent in the case of minors), but also those who have legal responsibility for their care. For anyone accompanied by a partner or parent, we (or the community health worker) requested the consent of partners and or significant others of pregnant and breastfeeding and adolescents before involving them in the study. Researchers obtained informed (written or thumb print) consent from participants after fully explaining the purpose of the study and assuring them of confidentiality.

Researchers assured anonymity by not collecting personal identifiers like names or phone numbers from the participants. We assigned a code to each participant to ensure confidentiality. Since the nature of qualitative data collection makes it inevitable to collect some demographic information like age and education level, we gave this information a number or letter code to ensure confidentiality.

Only the principal investigator or an authorised person from the co-investigator team had access to participants' information, which we stored in a password-protected computer.

The research team adhered to national and international guidelines for conducting research in persons to ensure safety for investigators and study participants. We used virtual communication, like email and phone calls, as feasible to coordinate with national level government and local officials.

As part of ethical obligations, the research team followed all COVID-19 protective measures, including physical distancing, wearing masks, and applying hand sanitizer to minimise transmission of the disease.

Study Limitations

This was a qualitative study and its aim was to explore taboos for and food preferences of the studied groups. In this regard, this study only presents such information according to participants and areas specific to this study. While we aimed to gather information on common food taboos for and preferences of pregnant women, breastfeeding mothers, adolescents, and children in each region, there may be variations within regions that we did not capture. These findings should be interpreted as specific to those areas and not representative of taboos and preferences of Tanzanian women in general. In addition, because we identified pregnant women through their presence at the health centre for relevant services, we may not have included the views of women who don't receive healthcare at facilities.

Chapter 4: Study Findings

Food Taboos

Food taboos are prohibitions that may cut across age groups and affect even children and mothers. Some taboos pertain to girls and women, while others pertain only to children. In communities where taboos affect all children, we included adolescent girls and, where they pertain to the behaviours of women, we also included adolescent girls in the women's groups.

Adolescent Girls

Food taboos and restrictions (healthy or unhealthy) targeting adolescent girls vary across communities whereby some communities have restrictions while others have no restrictions (table 5). For instance, adolescent girls in regions of Singida, Dar es Salaam, and Kigoma are allowed to eat most foods, compared to other regions where food restrictions were evident. Most restricted foods are those good sources of protein, which plays an important role in normal functioning of the body.

In Arusha, urban respondents reported unhealthy taboos restricting adolescent girls' consumption of fish like Kamongo, because it is associated with additional breast development in females:

> "We used to ask why we are not allowed to eat Kamongo fish; they told us a mother or the baby girl is not allowed to eat Kamongo because she will develop additional breasts" (FGD, adolescent girls, Arusha CC, urban).

Likewise, respondents in both urban and rural areas reported religious restrictions especially among Muslims and some Christians (Seventh day Adventists) forbidding pork consumption:

> "The Islamic belief forbids eating pork" (FGD, adolescent girls, Mkalama DC, rural).

In addition, respondents reported community norms that restrict the consumption of animal meat for adolescent girls especially in urban Mbeya and rural Singida regions. In these places, adolescent girls are not allowed to eat goat meat (Mbeya) and chicken thighs (Singida). They are told that gender and age-related norms reserve this meat for men and parents to eat.

> "There are foods that are culturally not allowed to be eaten. According to our tradition, a female child is not allowed to eat goat meat" (FGD, adolescent girls, Arusha CC, urban).

> "For example, if a chicken is slaughtered in the family, parents are given a priority to eat meat like a thigh" (FGD, adolescent girls, Mkalama DC, rural).

Misconceptions concerning food consumption were also noted. It is believed that eating uncooked rice (kutafuna mchele) can result in vaginal candidiasis in adolescent girls. This misconception could reflect knowledge gaps pertaining to reproductive health among young girls.

> "Yes, don't eat uncooked rice. They connect it with getting vaginal candidiasis where you produce whitish mucus resembling washed rice water" (IDI, significant other, Ubungo MC, rural).

Despite the presence of unhealthy food taboos that discourage adolescent girls from consuming some types of animal source proteins, the community is aware of the high nutrient needs for young girls and elders have been giving them nutrition advice on eating foods with a variety of nutrients.

> "In my community, they say a girl should eat a balanced diet, unlike others who can eat ordinary foods. Mostly they eat fish, meat, liver, rice, stiff porridge, and French fries" (FGD, adolescent girls, Mkalama DC, rural).

Table 5. Food Taboos and Restrictions for Adolescents

Taboo and Restriction Food Conditions/Feeding Behaviour	Reasons	Region/Place
Chicken thighs	Reserved/prioritised for parents	Singida, Mkalama DC—rural
Pork	Religious reasons	All regions
Kamongo fish	Woman will develop additional breasts	Arusha, Arusha CC—urban
Meat from the goat	Reserved for men	Mbeya, Mbeya CC—urban
Uncooked rice	Vaginal candidiasis—whitish water will come out of the from vagina, from fungus	Dar es Salaam, Ubungo DC—rural

Pregnant Women

Food taboos and restrictions for pregnant women are common but vary across communities (table 6). Communities believe that adherence to food taboos and restrictions will prevent negative health outcomes for mothers or infants, so encourage strict adherence during pregnancy. Taboos range from prohibiting consumption of food types to restrictions on the amount to take to not eating food with certain conditions. Taboos were grouped into two main groups of healthy and unhealthy taboos.

There are several healthy taboos and beliefs. Communities acknowledge consumption of non-nutritious materials such as alcohol and cigarettes are not good for health and prohibit them for pregnant women as it can affect unborn babies. Consumption of alcohol, energy drinks and as well as cigarettes during pregnancy are believed to result in adverse/negative health effects on the foetus.

> "Maybe we are not allowed to drink alcohol and smoke cigarette[s] but all foods which are allowed to be eaten by human beings we all just eat" (IDI, significant other, Singida MC, urban; FGD, pregnant women, Kinondoni MC, urban).

> "Energy [drinks] are prohibited for pregnant [and lactating] women. They have chemicals" (FGD, pregnant women, Mkalama DC, rural).

Pregnant women are prohibited from consuming food leftovers (commonly known as kiporo) due to perceptions that they are lower in nutrients and will cause defecation during delivery. The reasons given portray misconceptions that can limit nutrient intake, as consumption of leftover food is a common practice. However, restrictions on the consumption of leftover food may reduce the risk for transmission of foodborne disease and associated problems.

> "... leftover food [Kiporo] means it has lost nutrients and if she eats kiporo, she will get fat" (FGD, pregnant women, Kinondoni MC, urban).

> "In some societies, they don't allow pregnant women to eat leftovers, if eaten she will defecate more during childbirth" (FGD, pregnant women, Kinondoni MC, urban).

Consumption of French fries with eggs (chipsi mayai) is a taboo, especially for pregnant women. This may be a healthy belief if women are already overweight, but it may not be problematic if the person is underweight and consumes a usually starchy diet (see nutrient composition of dish in annex 2).

> "I believe that there are foods which pregnant women are not allowed to eat; even these French fries with eggs (chipsi mayai) because they add lots of fat in the body" (IDI, community leader, Ubungo MC, rural).

Eating adequate food containing essential nutrients based on food groups is vital for the health and well-being of unborn babies and mothers. Food taboos restricting food consumption during pregnancy can result in low nutrient intake and eventually malnutrition, which negatively affects the health of the unborn baby and mother. However, it is important to eat in moderation especially when a woman is pregnant. We found food taboos on the amount of food to consume reported in the Arusha region specifically in the Maasai community where large meals are prohibited during pregnancy. Fear of giving birth to a large baby, associated pain following perineal tears, and caesarean section provides a motive for them to abide by the taboo. Fellow women and their spouses usually are responsible for monitoring what pregnant women they consume. One of the respondents clearly noted that—

> "Pregnant women are told and they are aware when they shouldn't eat large meal[s] as it can result in giving birth to a big baby. Thus, she eats little as if there is no food. That is why they drink porridge" (KII, DNuO, Longido DC, rural).

It is also a taboo for a pregnant woman to eat other non-food items like clay and charcoal as it can cause worms, affect the unborn baby or lead to appendicitis:

> "I can say in our place also they prohibit eating raw rice and soil/clay because it affects. When you chew that rice there is a system in our stomach which separates hard and liquid things. If you did not chew properly it goes to cause appendicitis" (FGD, pregnant women, Nyamagana MC, urban).

Unhealthy taboos are those which prohibit consumption of food items with nutritional advantage. Such taboos were reported in relation to eating eggs as well as large meals for pregnant women. Eggs were seen as risking having babies without hair and swollen heads, and additional meals required during pregnancy to prevent weight gain for unborn babies, and childbirth difficulties. Restrictions on egg intake can limit intake of protein. Some reasons given for this were as follows:

> "… Women should not eat eggs because they can give birth to a big baby whereby delivery by operation will be needed" (IDI, significant other, Ubungo, rural).

> "… if woman has not given birth, she is not allowed to eat eggs and if she eats [she] can give birth to a child with no hair" (KII, influential person, Busokelo DC, rural).

Other unhealthy taboos also discourage consumption of protein-rich foods. Respondents reported that kambalea and kuhe, varieties of fish, cause you to deliver a child with a physical disability and have slow labour, respectively.

Citrus fruits are rich in vitamin C, which is vital for the health of unborn babies and pregnant women. Community beliefs that consuming lemon during pregnancy can lead to negative health outcomes including childbirth to low birth weight. The misconception presents a missed opportunity for nutritional health stakeholders in the community. Surprisingly, we found a perception of an association between consumption of pepper and giving birth to a baby with red eyes. The association could also be a missed opportunity to address misconceptions related to existing neonatal eye diseases. One of the study participants noted that—

> "We are only advised by the community around us… if you eat lemons when you have low blood, it may cause you problems. If you eat lemons, you will start to feel dizzy… also with pepper, you will give birth to a child with red eyes; the child will suffer from an eye disease" (FGD, pregnant women, Arusha CC, urban).

Table 6. Food Taboos for Pregnant Women

Taboo	Reasons	Region/Place
Healthy Taboos		
Alcohol	Effects to the baby in the womb	Singida, Singida MC—urban Dar es Salaam, Kinondoni MC—urban Arusha, Arusha MC MC—urban
Cigarettes	Effect on the baby in the womb	Singida, Singida MC—urban Dar es Salaam, Kinondoni MC—urban
Energy drinks	Negative effects to a mother and a child	Singida, Singida, MC—urban, Mbeya, Busokelo DC—rural
Leftovers (kiporo)	Passing stool during delivery Less nutrients	Dar es Salaam, Kinondoni MC—urban
Chipsi mayai	Increase fats in the body	Dar es Salaam, Ubungo MC—rural
Unhealthy Taboos		
Lemon	Dry blood Feeling dizzy Causes blood thinning	Dar es Salaam, Ubungo MC—rural, Arusha CC—urban
Peppers	Baby will be born with red eyes	Arusha, Arusha CC—urban
Pineapple	A baby will be born with skin patches	Mbeya, Busokelo DC—rural
Pork	Religious reasons	All
Eggs, chicken	Giving birth to a baby with no hair Bad for the child Giving birth to baby with a swollen head Delivering an unhealthy infant	Arusha, Arusha CC—urban, Longido DC—rural Mbeya, Busokelo DC—rural, Dar es Salaam, Ubungo MC—rural Singida, Mkalama DC—rural Mwanza, Nyamagana MC—urban
Clay/soil/charcoal	Has worms leading to anaemia Has bacteria Higher risk of giving birth to an ill baby When a child is born, he or she will be eating a lot of soil as well Causes constipation and hernia Causes appendicitis Affects the organism inside [baby]	Singida Singida, MC—urban Mbeya, Mbeya CC—urban Mwanza, Nyamagana MC—urban, Sengerema DC—rural
Eating until one is full/large meal	Results into a big baby hence surgery during delivery	Arusha, Longido DC—rural

Taboo	Reasons	Region/Place
Kambale (fish)	Delivering a child with a physical disability	Mwanza, Nyamagana MC—urban
Kuhe (fish)	When she starts labour, it will be on and off	Kigoma, Kigoma MC—urban

Postpartum and Lactating Women

Respondents noted variations in food taboos for breastfeeding mothers across study areas of Singida MC, Mkalama DC, Arusha CC, Longido DC, and Ubungo MC. All taboos related to ensuring well-being for a mother and newborn baby typically last for a few weeks after childbirth.

It is taboo for breastfeeding mothers to eat hard (e.g., ugali, rice) and foods that are cold in temperature. Instead, postpartum mothers should eat warm, soft, and watery foods such as nutritious soft porridge composed of a variety of food groups (rice, maize, sorghum, millet, peanut, or Blue Band and milk); *uji wa lishe* (soft porridge made of a mixture of cereals with peanut butter or margarine and milk); meat soup; or cooked stewed banana in the days immediately following delivery. Eating chilled or hard foods, such as stiff porridge made up of millet, sorghum, beans, grounded local green vegetables (ndago), or sardines and rice is prohibited during the first few days after delivery. This food taboo relates to preventing constipation, stomach aches, and difficulty in bowel movements, to assist in recovery from perineal tears after giving birth, as well as promote adequate milk production. Some reasons given for this were as follows:

> "She is supposed to eat those soft foods such as cooked bananas, soft porridge, or soft cooked rice mixed with ground groundnuts and oil until [she] recovers [enough] to eat hard food especially if she has perineal repair following [a] tear following childbirth trauma" (IDI, significant other, Singida MC, urban).

> "After childbirth, lactating women should eat food that stimulates milk production including meat soup, porridge, mashed cooked banana, not ugali based on locally available food" (CSO, Arusha, MC, urban).

Table 7. Food Taboos for Postpartum and Lactating Women

Taboo	Reasons	Region/Place
Hard foods	Body has not recovered yet so difficult to digest hard foods (e.g., stiff porridge made of millet, sorghum) Having ulcers in the stomach Do not stimulate breast milk production	Singida, Singida MC—urban Arusha, Arusha CC—urban Dar es Salaam, Kinondoni MC—urban
Ugali	Difficulties in bowel movement The stomach is still not in a situation where it can receive such a type of food	Arusha, Arusha CC—urban Singida Dar es Salaam, Kinondoni MC—urban
Beans	Stomach ache and constipation	Singida, Mkalama DC—rural
Nut grass	Stomach ache and constipation	Singida, Mkalama DC—rural
Sardines	Stomach ache and constipation	Singida, Mkalama DC—rural

Taboo	Reasons	Region/Place
Rice	Difficulties in bowel movement Constipation The stomach is still not in a situation where it can receive such a type of food	Dar es Salaam, Kinondoni MC—urban, Ubungo DC—rural

Young Children

We asked participants about food taboos for children aged below two years in their areas. Like pregnant women or adolescents, taboos in children pertain to food type, where there are food items caregivers are not allowed to feed young children; preparation, where allowed foods have a special preparation so they can be fed to the child; and the state of the food, where food consistency is either stiff or watery. In some places like Singida, participants mentioned no food is prohibited for feeding to young children as long as they can eat it, and it is available. However, participants in other places mentioned several healthy and unhealthy food taboos for young children.

> "There [are] no food restriction[s]; they can eat any[thing] as long as [they] are capable to eat [it]" (IDI, significant other, Singida MC, urban).

Participants shared views on both healthy norms and taboos existing in their places (see table 8). It is taboo to feed a young child with packaged food products because they have chemicals, unfamiliar ingredients, and unclear expiry dates or preparation procedures (e.g., sausage, peanut butter, porridge flour). Other foods like French fries result in child obesity if eaten without moderation. Thus, respondents preferred excluding these foods from young children's diets. Some participants give reasons as follows:

> "It is not allowed to give the child soda; it has many chemicals. Also, French fries can make them fat and may have side effects later in life" (FGD, caregivers, Ubungo MC, rural).

> "Things that I don't like to give a child, processed food sold in the shops, such as sausage. I don't like" (FGD, caregivers, Ubungo MC, rural).

Any food known to have any chemicals is prohibited to be fed to the young children. Instead, they should be fed natural foods.

> "These are the just foods that you find that are made of chemicals; I know that children should not eat them, they should eat natural foods and fruits from the fields, they should not use those things that are known to cause irritation in the body" (FGD, pregnant women, Arusha CC, urban).

Participants also said that the community believes that some staple foods lack nutrients (e.g., ugali with mlenda) or are hard for a baby to chew and swallow (ugali, rice, cassava). As such, these foods are a taboo for young children.

> "Ugali and Mlenda, it has no nutrients. Rice, the child will not be satisfied" (FGD, adolescent girls, Mkalama DC, rural).

An unhealthy taboo was reported as well. Some reported that feeding eggs to young children is a taboo. Eggs are believed to cause hair loss in young children:

> "Maybe there are customs like food taboos. Others say if a child is fed with eggs his/her hair gets plucked, but he/she doesn't know that an egg helps a child" (FGD, adolescent girls, Singida MC, urban).

Table 8. Food Taboos for Young Children

Taboo	Reasons	Region/Place
Ugali	Lacks needed nutrients Hard to swallow	Singida, Mkalama DC—rural
Mlenda	Lacks needed nutrients	Singida, Mkalama DC—rural
Eggs	Hair gets plucked	Singida, Singida MC—urban
Rice	The child will not be satisfied Hard and cannot chew	Dar es Salaam, Kinondoni MC—urban Singida, Mkalama DC—rural
Hard foods (e.g., ugali, sardines, rice, cassava)	Tough for child to chew and swallow	Singida, Singida MC—urban, Dar es Salaam, Ubungo MC—rural
Chips (French fries)	Make the child fat	Dar es Salaam, Ubungo MC—rural
Processed drinks (Soda, juices)	Have chemicals Have gas	Dar es Salaam, Ubungo MC—rural Singida, Singida MC—urban Arusha, Arusha CC—urban
Packaged foods (like sausage, milled groundnuts, flour for porridge)	Ingredients are not known Not known if expired Cannot know how they were prepared	Dar es Salaam, Ubungo MC—rural Arusha, Arusha CC—urban

Box 1. Food Taboos: Lesson Learned

- Food taboos and restrictions are common in most of the studied regions, with some variations and similarities across regions and population group studied needs noted.
- Despite community awareness on nutritional needs for adolescent girls, existing unhealthy food misconceptions and norms can predispose them to nutrition-related health problems.
- Healthy and unhealthy taboos for pregnant women are mostly geared towards protecting the health of the mother and foetus. Some are helpful, for instance, communities prohibit the consumption of junk food, clay soil, smoking cigarettes, drinking alcohol, and eating leftover food and encouraging consumption of hot/soft food. In contrast, other food taboos prohibit the consumption of animal products, such as eggs as a source of protein.
- Observed taboos for postpartum and lactating mothers are geared towards promoting nutrition and health during the postpartum and lactation period.
- Most foods excluded from the diets of children under two years of age are the commonly affordable and available staple nutritious food in the community, which may support dietary diversity.
- Understanding existing food taboos and restrictions is pivotal for development and implementation of mitigation and adaptation strategies.

Surprisingly, most of the food excluded from children's diets are types of staples which are commonly used, affordable foods and can be nutritious for a baby and promote healthy growth and development, such as ugali and rice. The finding implies there is a need for community awareness to address

misconception (unhealthy food practices) to ensure children are fed a balanced diet using locally available foods. It is important to note that these food restrictions are associated with mothers' preference for their babies to be healthy.

Food Preferences

Adolescent Girls

The findings suggest that adolescent girls prefer to consume fast food in nearly all regions, especially the urban and rural areas (table 9). The exception is the Mwanza and Kigoma regions, where girls preferred ugali.

Preferring to consume energy-dense foods is a common unhealthy eating habit in adolescence that can predispose them into malnutrition-related health problems if consumed in excess. These include French fries, ice cream, cakes, chocolate, pancakes, and soda.

> "[I prefer eating] French fries served with chicken, eggs, barbeque meat, fish, sausage, or plain chips" (FGD, adolescent girls, Kinondoni MC, urban).

Similarly, the reasons for fast food preference varies between urban and rural adolescents. Preferences are based on ready availability, low cost, good taste, unique food, staple food and easy to carry.

> "For the girls, they prefer to eat food they feel is easy to prepare and easily available like French fries eaten with or without eggs, fish and chicken after school. You find them passing around areas where French fries are sold and chips costing 1,000 TZS (0.43 USD) per plate" (IDI, village executive officer [VEO], Ubungo MC, rural).

> "Girls associate cooking other food with burden in terms of time spent for preparation and washing dishes; I think this is the main reason they prefer readily available food to each such as French fries" (IDI, significant other, Kinondoni, urban).

> "In my opinion, they go for easily accessible food in terms of cost, because she may be a college or high school student struggling to get other needs. So, she will go to cheap food regardless of the taste" (IDI, CSO, Arusha CC, urban).

Table 9. Foods Preferred by Adolescent Girls

Preferred Food	Reason	Region/Place
Fried potatoes	Easy to carry from one place to another, and easy to prepare Simple food Easily available	Kigoma, Kigoma MC—urban Dar es Salaam, Kinondoni MC—urban Arusha, Arusha CC—urban, Longido DC—rural Singida, Singida MC—urban Mwanza, Sengerema DC—rural
Rice	High appetite for rice	Kigoma, Kigoma MC—urban Mwanza, Sengerema DC—rural Nyamagana MC—urban
Fried cassava	Stays in the stomach for longer Good taste Simple food	Kigoma, Kigoma MC—urban Dar es Salaam, Kinondoni MC—urban Arusha, Arusha CC—urban

Preferred Food	Reason	Region/Place
Fish	Nutritious, tastes good, availability	Mwanza, Nyamagana MC—urban Mbeya, Mbeya CC—urban
Ugali	Availability, staple food	Mwanza, Sengerema DC—rural Singida, Singida MC—urban Mbeya, Mbeya CC—urban
French fries with fried eggs or chicken	Uniqueness/special, tastes good Simple food, easily available	All regions
Ice cream, cakes, chocolate, pancakes	Tastes good	Dar es Salaam, Kinondoni MC—urban Arusha, Arusha CC—urban

Study participants reported a perception that French fries is a type of food consumed by higher class people (symbol of wealth) such celebrities, so eating such food is a point of pride to adolescent girls. Adolescents tend to copy what their role models/celebrities eat via social media due to socialisation or peer influence.

> "Ahh social media influences adolescent life, you find someone is interested to live like Paula (a local celebrity) including copying food she eat[s]" (FGD, adolescent girls, Arusha CC).

> "I can say it's an individual perception, especially college girls, they feel that eating ugali is like nothing. They don't like stiff porridge" (IDI, community leader, Nyamagana MC, urban).

Respondent preferences for eating ugali were mostly reported in rural areas compared to urban areas, for instance study populations in Mwanza and Kigoma regions. Consumption of Ugali was associated with availability, coupled with affordability for large families. Ugali is always consumed with a relish like beans or vegetables.

> "You find [in] the families [that] have eight or six children, parents believe stiff porridge with beans are the only affordable food that can satisfy the family, unlike French fries. So, in most rural areas French fries are not available at home but can be eaten at school" (FGD, adolescent girls, Kinondoni MC, urban).

Table 10. Summary of Reasons for Preference of *Chipsi Mayai* (French fries with omelette) among Adolescent Girls

Urban	Rural	Region
Nice food	Good taste	Mwanza
Easily accessible/available Peer influence, fashionable Good taste	Good taste Not frequently cooked at home—tired of stiff porridge	Dar es Salaam
Expensive but associated with urban lifestyle	Symbol of urban lifestyle	Lindi

Urban	Rural	Region
Rare commodity Good taste Peers influence	Unique/special kind of food Good taste	Singida
Easily available, cheap	Cheap Good taste	Mbeya
Easily available	Rare commodity but most liked for its symbolism with urban lifestyle	Kigoma
Tastes good Fashionable	Unique, not frequently available	Arusha

The findings imply a missed opportunity to address unhealthy eating/dietary habits and misconceptions among adolescent girls through the promotion of a healthy lifestyle.

Pregnant Women

The findings show some similarity in food preferences among pregnant women in both rural and urban areas. Respondents attested that proteins such as chicken, fish, and red meat are seen as a status symbol, implying that you are better off and well taken care of. These animal source foods are usually served with carbohydrates (ugali, rice) as well as a variety of available green vegetables. However, preference varies based on staple food available across geographical and climate in a particular community. The most common staple food respondents reported pregnant women eating include seasonal fruits (mangoes); ugali, rice, cassava (carbohydrates); cooked meat or fish (protein); and a variety of green vegetables and legumes (rich in vitamins and minerals). People cook and serve these differently based on personal tastes:

> "Vegetables such as pumpkin leaves, cabbage, 'figiri' or Chinese as well as cooked fish and meat and eggs are the preferred food" (FGD, pregnant women, Busokelo DC, rural).

> "I mean, I don't choose anything related to foods, [I eat] green vegetables, stiff porridge, rice served with sardines, fish or meat. I really eat everything" (FGD, pregnant women, Arusha CC, urban).

> "Most consume fish because [it] is abundant but served [it] with other cultivated foods. That is, some other foods are supplementary; these are vegetables and other foods" (IDI, community leader, Kigoma MC urban).

Similarly, socio-economic status of the family dictated pregnant women's food preferences, since they eat what they can afford:

> "You cannot force yourself to eat something good if you can't afford to buy, so you have to eat what is available" (FGD, pregnant women, Arusha CC, urban).

Despite the importance of vegetables as a source of some minerals and vitamins, their consumption is low.

> "Those with income (factory workers) and awareness of a healthy eating lifestyle through antenatal clinic visits consume a variety of food including eggs, milk, [and] meat mixed with vegetables. Some prefer to eat rice served with beans or meat once in a while because of their income. Consumption of vegetables is very low, which is very important in building the body and immunity for body protection and healthy" (IDI, CSO, Arusha CC, urban).

Few women mentioned a preference for vegetables and this can limit intake of vitamins and minerals, important for the health of a mother and baby. Pregnant women did not report preferences for eating fast foods.

Postpartum and Lactating Women

Participants indicated that postpartum and lactating mothers prefer stiff porridge, rice, French fries, and pancake (carbohydrates); served with fish and a meat source, eggs (proteins), as well as legumes and milk (proteins); and fruits (bananas, oranges, watermelon, and mangoes).

> "[Foods women prefer to eat are] French fries served with fried eggs or chicken; they instruct their spouse to bring it at home after work hours. Other preferred foods include rice served with beans, meat, fish, [and] chicken" (IDI, VEO, Ubungo DC, rural).

> "Yes, we have… (laughing) avocadoes, pineapples, watermelon, and bananas. When it comes to vegetables, there is spinach, amaranth, pumpkin leaves, cassava, [and] leaf vegetables. So, we take these foods, [but] we differ in terms of financial capacity" (FGD, caregivers, Kigoma MC, urban).

Their preference is based on what is quick to prepare, seasonal availability, affordability, good taste/flavour, uniqueness as well as the sense of excitement and happiness gained from consumption.

> "These are the food[s] with good taste. For instance, the taste is different for one who consume[s] rice served with beans compared to one [who] consumes stiff porridge served with beans. You find most of the women enjoy the taste when eating these foods" (IDI, VEO, Ubungo MC, rural).

Despite reported healthy eating habits, unhealthy eating habits exist, such as eating fast foods (French fries). This implies not all women who maintain healthy eating habits during pregnancy sustain them during the postpartum and lactation periods. Similarly, the absence of a healthy taboo that prohibits consumption of fast food could be responsible for unhealthy eating practices, such as large portions of fast food consumption. Thus, promoting healthy eating habits during the postpartum and lactation period should be emphasised in the community.

Young Children

We asked study participants about appropriate food for under two years and reasons for feeding them. Participants acknowledged the absence of unhealthy food taboos and misconceptions for children below two years of age. They reported porridge made of maize, cassava, or millet flour (carbohydrates) and sometimes mixed with groundnuts or milk (protein), before adding bananas, cassava, and sweet potatoes (carbohydrates). This is served with fish, meat (proteins), and amaranth (rich in vitamins and minerals) and is a common meal for children under two years of age depending on age of child and food taboo (table 11). This signifies that the community is aware of healthy feeding practices for children below two years of age. One participant attested that—

Box 2. Food Preferences: Lessons Learned

- Both healthy and unhealthy food preference exists in the study communities
- We observed variations in food preferences for pregnant women, postpartum mothers and children under two years across regions.
- Healthy food preferences are common for pregnant women and children under two years of age while unhealthy eating habits are common for adolescent girls as well as postpartum and lactating mothers (e.g., eating fast food [French fries] in large amounts).
- Food preference is mostly driven by availability, affordability, good taste, identity, socialisation, and urbanisation.
- Nutrition education and counselling on healthy eating habits (balanced diet) is crucial to address existing unhealthy taboos and restrictions or food preference across all groups.

"… we have been learning that the children should take different types of food rich in proteins (fish, beans); carbohydrates (stiff porridge, sweet potatoes, rice); vitamins and minerals (watermelon, Chinese, pumpkin leaves). These play [a] part in building the body to fight against diseases and prevent stunting" (IDI, CHW, Kakonko DC, rural).

They also acknowledged initiation of complementary feeding to children at six months as well continuing with breastfeeding based on needs.

"Okay, children under two years need breast milk because breast milk contains all essential nutrients needed for [the] growth of a child. Afterwards, breast [milk] only is inadequate and supplementary food is needed" (KII, DNuO, Kakonko DC, rural).

Table 11. Food Preferences for Young Children

Preference	Reasons	Region/Place
Groundnuts	Build the body	Mkalama DC—rural Singida, Arusha—urban
Flour with a variety of other foods, such as groundnuts or milk	To avoid stunting to the children	Kakonko DC—rural Kigoma MC—urban Arusha CC—urban
Porridge (made of maize/cassava/millet flour, groundnuts, and milk)	Build the body, energy giving	Mbeya, Busokelo DC—rural Mbeya, Singida—urban Lindi—urban
Dairy milk [goat, cow]	Build the body, nutritious, availability	Arusha, Singida, CC—urban Mkalama DC—rural Singida, Longido DC—rural Arusha, Dar es Salaam—urban Ubungo MC—rural

Current Interventions and Target Groups

Informational and educational interventions occurring at health facilities were the most commonly mentioned initiative to address nutrition issues in the study sites. Respondents in all regions/districts mentioned that health workers provide nutrition education at the health facilities:

"That is when we begin to educate them on what to eat. Sometimes we advise them to eat foods that increase their blood and iron levels such as green leaf [vegetables].[1] We give them extra lessons on the importance of eating eggs, milk, and cow [beef] as [a] whole; because some women may not have a habit of eating them and hence when she becomes pregnant is when she begins to consume" (KII, DNuO, Mkalama DC, rural).

Study participants described some other strategies that may ensure appropriate nutrition for women of reproductive age. These strategies target increased food availability and diversity, increasing opportunities for income generation to improve food purchasing power:

"For farming and livestock keeping communities let's say cattle is a business but also a source of food… people also eat it for the needs of the family… or if a large percentage of people keep

[1] While recommended by this health worker, green leafy vegetables are a poor source of bioavailable iron.

chicken for the sake of the family [to consume] … if one wants to eat local chicken meat, they should not go to the store to buy…" (FGD, pregnant women, Arusha CC, urban).

Another participant commented along similar lines on the need for devising ways to boost for family income and obtaining different food sources:

> "I think, on the side of the community level, I, as a parent and father in the family, I must devise continuous strategies that will help me get income. It could be possible that I have some farms and I grow on them some food crops; if not growing food crops, keeping animals like cows for milk, chicken for eggs… you see" (IDI, influential person, Busokelo DC, Rural).

While some strategies applied for parents, adolescent girls also proposed creating an initiative to raise awareness among parents so that they can support and ensure availability of appropriate foods for child and adolescent nutrition:

> "What we have to do is to educate the parents; for example, you find a parent is very authoritative and does not understand good nutrition or what… you will end up eating ugali every day. So, we need to educate them and tell them about the best foods that can satisfy or fulfil us" (FGD, adolescent girls, Arusha CC, urban).

In some instances, nongovernmental organisations (e.g., Catholic Relief Services [CRS], Benjamin Mkapa Foundation) support initiatives to promote nutrition via different approaches. Respondents reported these interventions in some study sites (especially Mbeya and Kigoma) and these have the potential for contributing to efforts to improve nutrition for children:

> "The project I know that deals with nutrition is [from] CRS. They provide education about nutrition for children aged zero to five years. They are specialised in looking into food and nutrition issues for children" (IDI, CHW, Kakonko, rural).

Commonly Used Source of Communication

Communities use many sources of communication in different areas. The sources of information most commonly mentioned by participants are radio, television, health care facilities, and fliers or posters. Some places also use public announcement systems. Health care providers in the health care facilities and community health workers are a great source of nutrition information in many communities:

> "The source of information via newspapers, by our mobile phones, by radios, TV, as well as advertisements; they normally pass around, there are others who organise meetings at night for the sake of covering a certain centre, they conduct meetings to educate people on nutrition issues. So, they provide PAs [public announcements] and they pass around all the streets, they know which centres where these people go and listen to some information, at the health centres and dispensaries" (IDI, community leader, Ubungo DC, rural).

Many participants cited the radio as the most preferred means of receiving information. Participants in all places mentioned radio given its ease of access and use. Some participants said one may listen on the radio from their mobile phone. Radio hosts can present the topic clearly and benefit many people at one time, though it has some disadvantages where the listener is not able to ask questions and get clarification right away:

> "By means of radio, someone might learn about what has been prepared by the presenter on a given topic. For instance, someone might learn about nutrition issues by using radios because when they explain about something, someone understands it even if he was not aware of it before. Even if he was aware of it, he gets to understand it extensively. So, I find it a nice method and beneficial. When we come to the disadvantage, it is the same issue that someone will hear, he can understand and ask some questions but he will not get direct answers" (IDI, CHW, Kakonko DC, rural).

Television follows radio on the list of preferences. Participants said that using television to share information can reach many people clearly since most households have televisions:

> "The strength of using television in disseminating nutrition information is it can reach anybody anywhere, at work or even when travelling; some cars have televisions now so one may have the advantage of getting the education if the program is aired. It is the fastest channel of disseminating information if one has a television. Most Tanzanians now are aware; thus, most houses have television" (IDI, CHW, Nyamagana MC, urban).

Others pointed out that community leaders like ward executive officers and those in charge of health care in the community can educate people:

> "Television is not much, some have it and some don't. Normal announcements are like this: put the executive of the ward office to deal with these things then it will be very easy: he will give flyers, distribute them, and make announcements; life goes on" (KII, Influential person, Lindi MC, urban).

Regarding print media, the preference was for newspapers, magazines, posters, and fliers. These can be read by the majority of community members. Posters and fliers are distributed in schools, placed on the walls and in the health care facilities. Adolescent girls prefer magazines and newspapers.

> "Well, we get newspapers, those newspapers related to nutrition and whatever; there is a Fema (a type of magazine). Ehee, Fema could focus more on nutritional matters and they even send them to the students in schools and provide them, they will get benefits" (FGD, adolescent girls, Liwale DC, rural).

Table 12 below summarises some of the commonly mentioned means of communicating about nutrition and their strengths and limitations.

Table 12. Commonly Used Means of Communication on Nutrition

Media	Advantages	Disadvantages	Name	Region/Place
Radio	• Beneficial in teaching • Heard all over the country • The presenter can clearly explain the topic • People can listen it on their phone • People will be informed easily and on time • People walk with radios or listen on the go	• May not reach all people • People are busy and may not listen to the radio • Not all people have radios • Difficult to make sure all stations are supplied with the same message	• Mashujaa radio—Liwale MC, rural • Radio Sengerema	• Lindi MC—urban • Kakonko DC—rural • Longido DC—rural • Kinondoni MC—urban • Busokelo DC—rural • Mbeya CC—urban • Sengerema DC—rural • Nyamagana MC—urban • Ubungo DC—rural
Online media and messaging	• Advice on nutrition • Majority own phones	• Not all people have phones or internet access • Lack of security and privacy	• WhatsApp • Google	• Kinondoni MC—urban • Ubungo DC—rural • Longido DC—rural
Television	• Can place in the schools, hospital • Will inform people easily and on time • Fastest means of conveying information • Can watch from anywhere even in the car	• Not everyone has a television • Few experts to provide nutrition education • Some things are not evenly distributed in these stations • Difficult to make sure all channels	• ITV and Upendo TV—Mbeya CC, urban	• Longido DC—rural • Busokelo DC—rural • Mbeya CC—urban • Ubungo DC—rural • Nyamagana MC—urban • Mkalama DC—rural • Kinondoni MC—urban

Media	Advantages	Disadvantages	Name	Region/Place
		have the same information • Takes time to produce such materials		
Fliers/Leaflets	• People can read • Those who can read can explain to others • Can distribute to every house • Can simplify educating people	• Some cannot read		• Lindi MC—urban • Liwale DC—rural • Mbeya CC—urban • Mkalama DC—rural
Meetings	• Good timing makes many people attend	• Some people may not show up for the meeting		• Lindi MC—urban
Health care facility: service providers and CHWs	• Children are taken to clinic • Can help to advise on nutrition	• Not all people go to the clinics • Some people don't send children to the clinics after three years • Monotonous lessons • Few personnel to provide such information		• Liwale DC—rural • Kinondoni MC—urban • Longido DC—rural • Busokelo DC—rural • Mbeya CC—urban • Sengerema DC—rural • Nyamagana MC—urban • Mkalama DC—rural
Posters, magazine/ newspapers	• Can distribute to adolescents in schools	• It is not possible for the reader to ask questions directly	• Fema—Liwale DC • Mwananchi	• Liwale DC—rural • Mbeya CC—urban

Media	Advantages	Disadvantages	Name	Region/Place
	• The person who puts the poster up can add their contacts for questions • Someone can read when resting			• Kinondoni MC—urban • Ubungo DC—rural
Visits/outreach	• Cover many people (e.g., in schools, households) • People can ask questions and receive answers directly	• Not all will accept what you tell them • Cannot reach out of school adolescents • Many questions that are not diet related		• Liwale DC—rural • Sengerema DC—rural

Gaps and Opportunities in Food Taboos and Preferences

As summarised in table 13, we observed several gaps and opportunities to improve nutrition knowledge and behaviours.

Table 13. Observed Gaps and Opportunities

No.	Observed Gap	Opportunities to Address Observed Gap (Mitigation Strategies)
1	Knowledge gap on proper nutrition for adolescent girls reflected in preference to fast food coupled with norms and misconceptions can predispose them to nutrition-related health problems such as chronic noncommunicable diseases.	Review existing (social and behaviour change communication) materials targeting adolescents to address emerging misconceptions, unhealthy norms related to eating.
		Integrate nutritional awareness activities into existing adolescent health interventions including school health education; facility-based interventions providing reproductive, maternal, newborn, child, and adolescent health (RMNCAH) and community therapeutic care services; peer group and champions at adolescent gatherings; social media as well as information communication materials.
2	Unsustained healthy food consumption (e.g., preference for fast food after pregnancy) can predispose them to nutrition related health problems such chronic noncommunicable diseases. Adherence to healthy food consumption mostly occurs during pregnancy in areas where availability of fast food is limited.	Sustain provision of nutrition education targeting to address emerging misconceptions regarding nutrition health for women after childbirth.
3	Despite existing nutritional education intervention implemented at schools, health facilities, and community through the use of community volunteers, school teachers and health service providers, consumption of unhealthy food persists, especially for adolescent girls as well as postpartum and lactating mothers in both urban and rural areas.	Assess knowledge and skills of personnel engaged in community awareness (teachers, community volunteers, and health service providers) and provide update/refresher sessions in line with emerging knowledge gaps.
4	Perceived lack of income to purchase health food predispose pregnant women, adolescent girls, children below two years as well as postpartum and lactating mothers to eat unhealthy food and nutrition-related health problems.	Engage agricultural and community development officials as well as CSOs/NGOs to strengthen existing interventions targeting to ensure food security and diversity including— • Life skills capacity strengthening activities • Small scale farming (hot culture and small-scale livestock keeping)

No.	Observed Gap	Opportunities to Address Observed Gap (Mitigation Strategies)
		• Linking women to local community financial savings groups such as Village Community Banking • Discourage harmful habits that may lead to food insecurity (e.g., seasonal celebrations)

What Is Not Done in Nutrition Education and Promotion [Gaps]

At the health facility, mothers and children are the priority when it comes to nutrition, while adolescents are lagging behind. Adolescents have limited understanding on appropriate eating practices and peer pressure usually drives their food preferences. This population group may be good ambassadors to spread messages about nutrition if they are first well equipped with knowledge and skills because they can share what they gain with the rest of the community:

There are also opportunities for using media mix depending on contexts and type of target population and their preferences. This is because different approaches for reaching audiences with nutrition information have their strengths and limitations. However, it appears that the mix of media for reaching different groups (e.g., adolescents who prefer social media) has not been fully harnessed:

> "There are shortcomings because you find that some do not have media like I said radio; others you find that there is no television, or if you find a phone or for example like me it is a Facebook phone… I usually get a lot of information on the radio and on TV; that is where I often find information… for the others, for example, those in the village, maybe they would get information via village level campaigns" (FGD, adolescents, Mbeya CC, urban).

There is an opportunity to utilise community health workers to provide information, sensitization, and community mobilisation, and education. Both male and female CHWs should conduct household and outreach activities to address gaps in nutrition and feeding practices and preferences among women of reproductive age in the community.

Male engagement on nutrition issues such as addressing food taboos and understanding preferences is crucial. Some women have good knowledge of what to eat and what to give their children, but their husbands are obstacles to their adoption of different dietary behaviours. Some dietary practices may be due to taboos and preferences that have existed for a long time and may require normative changes involving men and other members of society. This is an important gap that requires attention due to existing gender and power dynamics evident in different parts of the study regions. Lessons may be taken from the family planning field as normative change has been critical in that area of public health as well.

While this study is about food taboos and preferences, the problem of overweight is a growing concern among women (especially in urban areas) which practitioners should address. Some health professionals' advice shaped respondents' food preferences and individual dietary choices/prohibitions.

Community health workers have been providing important linkage between community and the health facilities. Both male and female CHW should conduct household and outreach activities to address gaps in nutrition and feeding practices and preferences among women of reproductive age in the community. However, as change agents, CHWs require additional knowledge and skills in the basics of nutrition for different segments of the population in order to be able to deliver appropriate information and counselling to community members.

Opportunities

Findings reveal that there are few educational interventions on appropriate nutrition and dietary practices and they mainly exist at health facilities. Current facility-based interventions appear to target women who attend clinics, thus missing some adolescents who also require nutrition competencies. Using a combination of information and educational interventions may prove useful in reaching adolescents and young women.

There may be opportunities in implementing interventions with the use of dissemination platforms like social media, print materials, and educational approaches such as community theatre. Practitioners should use different means of platforms and media to send messages to people, rather than depending on only two or three channels or means.

Different community and institutional platforms offer opportunities of reaching community members with nutrition information and resources. Nutrition officers, community health workers, and school systems can continue to work together using different approaches to are crucial health-related information at the community level:

> "Of course, for now, we give education at the community level, in the streets there is a day dedicated to nutrition, but we also meet the community when they're in the school. We have lessons in schools, we have nutrition clubs in school, which we gave them a responsibility to ensure they talk of good eating habits to adolescent group, and we also have health teachers from primary to secondary schools who also have the responsibility to speak on bad and good eating habits in the clubs on the day of health and nutrition. By doing that we believe our community will grow in understanding issues of nutrition" (IDI, DNuO, Mbeya CC, urban).

Key Strengths or Examples of Good Practices to Promote/Sustain

Some of the existing initiatives/good practices that practitioners can sustain (at the individual, relationship, community, and health systems level) may include, but are not limited to—

- Provision of nutrition information and education through reproductive and child health programmes twice a week to mothers. Some of the topics to cover may include what they should/should not eat when pregnant.
- Incorporating elements on measuring weight, height, and body mass index, and nutrition counselling for women of reproductive age in community outreach programmes conducted by the Ministry of Health and other stakeholders.
- Advocating for other productive activities that may feed into regulating and diversifying diets, including keeping livestock such as cows and home gardening for both rural and urban dwellers in the study regions. These and other interventions would go a long way in addressing dietary diversity brought by seasonal variations in food availability.
- Educating the community about food groups/options that are locally available around them that caregivers can use instead of wondering where to get nutritious food. CHWs and health care providers can teach members of the community how to prepare various foods.
- Conducting demonstrations during Uhuru Torch where a nutrition officer shows a triangle diagram referencing all foods and explains how different population groups should consume them.
- Using "edutainment" in health education during District Council Nutrition Day. In some areas, nutrition officers use "drama" to provide education and entertainment to the community at the same time. Use of Nutrition Day can help the community to gain nutrition knowledge and eventually help in addressing food taboos and preferences that are unfriendly to public health.

Chapter 5: Discussion

In congruence with a study conducted by Chakona and Shackleton (2019); Kavle and Landry (2018), findings in this study show food taboos and restrictions are prevalent across many developing countries, both in urban and rural areas. Nevertheless, we noted variations on restricted foods or the reasoning attached to these restrictions across study areas.

The persistence of food taboos and restriction for pregnant women under the belief that they protect and support maternal health correspond to findings reported by McNamar and Wood (2019) in a study conducted in rural Tajikistan. Although most of the food taboos and restrictions reported in this study and previous studies related to nutritional health promotion (McNamar and Wood 2019; Riang'a et al. 2017), respondent reasoning was unrelated to nutrition. Evidence from the Maasai community in Tanzania shows that women address nutrition throughout the perinatal period and the women recognize how important nutrition is for them and their babies (Lennox, Petrucka, and Bassendowski 2017).

Unhealthy food taboos and restrictions of the consumption of high protein food (eggs, chicken, fish) as well as vitamin C (citrus fruits and pepper) and mineral-rich food (meat, chicken, fish) resemble findings from Tanzania (Lennox, Petrucka and Bassendowski 2017) and other parts of Africa as reported by Arzoaquoi et al. (2015) from Ghana and Ramulondi et al. (2021) in KwaZulu-Natal, South Africa. Similarities in study findings could reflect the existence of interrelated continental food taboos and restrictions, especially in low- and middle-income countries (LMICs).

Despite adherence to healthy food consumption during pregnancy, consumption of unhealthy food was reported for postpartum and lactation mothers. This finding agrees with studies conducted by Jardí et al. (2019) and Poulain et al. (2021), which reported progressive decreases in the consumption of healthy food (such as increasing consumption of junk food) from pregnancy to the postpartum period. This could be due to higher perceived risk of food-related negative health impacts during pregnancy, coupled with frequent nutritional education during antenatal care (ANC) emphasising nutrition. Secondly, observed healthy eating habits during pregnancy could be related to existing health food taboos and norms which no longer apply after childbirth. Thus, nutritional and RMNCAH stakeholders must explore factors responsible for the unsustained adoption of healthy food consumption and preference after childbirth for timely adaptation.

Unhealthy food taboos and restrictions for children below two years of age are absent in the study population, as children can eat any food. The healthy food consumption practice for children under two could reflect low (9 percent) unhealthy foods consumption in this age group reported in a Tanzania Demographic and Health Survey program 2022 report (MoH et al. 2023). However, mothers and caregivers had concerns related to consumption of ready-made foods for children related to chemicals and expiration dates/storage.

Findings show that lactating mothers restrict consumption of staple foods such as rice, cassava, and ugali owing to the fact that children find it hard to chew so they want to prevent choking. The complementary feeding period begins at six months after exclusive breastfeeding. Restrictions on the consumption of complementary staple foods for children older than six months may pose a risk for childhood malnutrition if they are not fed a healthy, diverse diet. Thus, in the future, age group categorisation of the sociocultural factors influencing food consumption should be widened to take into consideration to increase understanding of age-specific taboos and restrictions as well as associated nutritional outcomes.

Most existing taboos and norms for postpartum and lactating mothers relate to biology and health promotion, although, the reason given for adherence sometimes does not make the nutrition benefit clear. For instance, promoting the consumption of hot/warm liquid foods believed to stimulate breast milk production also reduces the risk for foodborne diseases as well as making sure the mother has

enough body fluid to promote milk production. The findings agree with Jeong et al. (2017) in a study conducted in India where communities prohibited lactating mothers from consuming cold foods but contrary to a study in West Bengal (Chakrabarti and Chakrabarti 2019). There are few studies on food taboos conducted in Tanzania, which highlights the relevance of the current study and need for additional inquiry. In addition, advice to consume special or high protein food plays a vital role in the recovery and production of breast milk and advice to consume soft food reduces the risk for constipation. Health education interventions should focus on giving women accurate nutrition information to counteract unhealthy taboos.

Given the high growth rates girls experience in adolescence, good nutrition benefits other physiological systems. Despite the national effort to promote good nutrition for adolescent girls, unhealthy food consumption habits and preferences such as consumption of fast food in high amounts prevails. The increased preference among adolescents of processed foods is not a phenomenon specific to Tanzania alone, but represents a global shift that has been a cause for alarm. A recent study indicates that in recent years, the consumption of processed foods and condiments such as bread, biscuits, popcorn, processed cereals, meat, potatoes/cassava chips, and margarine in Tanzania has increased as a result of urbanisation, income growth, and changing lifestyles. Recent studies indicated a considerable diet shift away from staple grains toward processed foods, paired with a dramatic increase in the total demand for marketed goods (Tschirley et al. 2015; Venance et al. 2020). Our results are similar to findings of studies conducted in Senegal as well as other LMICs where eating energy dense and high fat foods reported a common practice among adolescent girls especially in urban areas (Madélie et al. 2021). Nevertheless, in our study this preference is not only evident in urban areas but also among adolescent girls in rural settings of Tanzania. This also highlights the fact that while the rural/urban divide is recognized, there is increasing interaction and diffusion of ideas and lifestyles among rural and urban areas in modern Tanzania. One should take note that there is constant interaction (physical, virtual) between rural and urban folks and it is not surprising that the food preferences for rural and urban study participants are more or less similar.

Across all study groups, food availability, affordability, desirability, taste was associated with eating unhealthy foods. Urbanisation, socialisation, identity, and misconceptions shaped food preferences of adolescent girls, while a sense of excitement and happiness influenced the choices of postpartum and lactating women. Food taboos mostly relate to pregnancy, and reasons for adherence to taboos and restrictions resemble findings from West Bengal, Senegal, and South Africa (Chakrabarti and Chakrabarti 2019; Madélie et al. 2021; and Ramulondi et al. 2021). This implies that healthy taboos have a significant role to play in protecting the health of pregnant women and their babies.

Misinformation about nutrition and food around adolescent girls is an increasingly serious situation especially in low- and middle-income countries since nutrition knowledge gaps are common. Thus, addressing food consumption misconceptions with emphasis on full utilisation of the available healthy food (such as fruits or animal source foods) will contribute to the improvement of the nutritional status of women and children. For instance, consumption of pepper and lemon during pregnancy was associated with red eyes for newborn babies and anaemia in mothers, while consumption of uncooked rice was associated with vaginal candidiasis in adolescent girls. Despite the absence of literature for comparison with author knowledge, these findings signify a knowledge gap related to other diseases unrelated to nutrition available in the community. Thus, addressing existing misconceptions could be important to empower communities in understating early signs of health problems for timely management rather than avoiding certain food types.

Surprisingly, not preferring fibres and fruits is evident in this study; none of the study groups mentioned the consumption of vegetables, while only postpartum and lactating mothers reported consumption of fruits. These findings align with other studies which show low intake of fruits and vegetables among pregnant women, lactating women, adolescent girls, and children especially in low- and middle-income countries like Democratic Republic of Congo (Maykondo et al. 2022); South Eastern Zone of Tigray, Ethiopia (Haileslassie, Mulugeta, and Girma 2013) and 49 LMICs (Darfour-Oduro et al. 2018).

Respondents only noted taboos related to excluding citrus fruits (lemons) as well as mlenda. Based on the variety of fruits and vegetables available, findings signify low priority given to vegetables and fruits in the study population which are rich in vitamins and minerals.

Chapter 6: Conclusions and Recommendations

Conclusions and Areas for Further Research and Investigation

While the primary function of food is to provide nourishment, dietary customs play sociocultural and symbolic roles that go far beyond conventional nutritional benefits for the body. The findings highlight the important role food taboos have for members of community and health workers and their implications in addressing community's nutritional and food safety problems. Food taboos exist in all communities in the current study, but focus on specific restrictions of food items for pregnant women and adolescent girls. The strong focus on pregnancy and adolescence is due to the fact that pregnancy and adolescence are critical moments in stopping the intergenerational cycle of malnutrition. Food taboos and restrictions around pregnancy may explain the higher perceived risk to related negative health impacts coupled with frequent nutritional education given during ANC. With regard to preferences, the study has found a wide range of preferences among pregnant, adolescent girls, young children from six months to two years, and postpartum women. The preferences hinge on personal taste, aesthetics, purchasing power, seasonal availability, limited dietary diversity, peer influence, and socialisation.

Some food taboos come from cultural traditions and customs of the community, while others are due to cultural beliefs. Some communities established taboos like not eating eggs to prevent pregnant women from having big babies so delivery without medical intervention was possible. Other taboos, but beneficial, prevent the baby from harm, like eating clay and drinking alcohol. While some taboos prevent a certain behaviour (e.g., eating clay) in one community; in other communities, women of reproductive age prefer to consume those non-food items. Communities also prohibit women who have given birth from eating solid foods to aid healing from the shock of delivery. Communities encourage postpartum women to eat watery foods like porridge and soups to replace lost body fluids and stimulate breast milk production. Therefore, foods that communities allow women of reproductive age to consume are for aiding with health. Forbidding foods issues a warning that they should not eat those foods lest they cause problems.

This study has also shown that food taboos have been passed down from one generation to another just like culture. Some young women even cannot explain the reasoning behind certain food taboos. For example, community members forbid pregnant women from eating eggs not because they will give birth to a baby with a bald head, but because the baby in the womb may grow bigger and unassisted delivery may be a problem. This is likely because in the past there were no modern medical technologies to address the problem. Some food taboos are changing with ethnic and other social mixing. However, there is potential for other food prohibitions to appear, which requires exploration of how they emerge and what sustains them.

In both rural and urban areas, a combination of individual taste and health conditions, purchasing power, and availability of foods drive food preferences, but income levels and seasonal variations dictate access. In urban areas, individuals have a wide range of food choices, while in rural areas, dry seasons with acute food shortages may limit choices. While preferences may vary depending on age and life stage, different population groups targeted in this study prefer certain types of food. Some preferences may be dictated by taste, the uniqueness of the food, flavour, smell, and its symbolic and medical/health significance. In most cases, pregnant women and mothers eat what is available in their environment, depending on their capacity to buy those foods.

Adolescents prefer foods that taste good, and are well cooked with a number of ingredients and spices. We further learnt that what they eat depends on food availability and family socioeconomic conditions, but if they are given a choice they prefer red meat, fish, or chicken.

Furthermore, adolescents prefer foods such as fried potatoes, French fries with chicken or eggs that are rare for them to eat at home. It is only by chance one happens to eat such meals (they miss the food served at home); however also these foods are expensive for them to buy given their dependent economic status.

All demographics need health workers to provide nutrition education in the community. Educating community members on the importance of eating from each of the different food groups is essential. In addition to radio and television, nutrition officers can use social media to educate people on nutrition. Further research may be needed to investigate how different preferred foods affect maternal health and nutrition outcomes in this population group. Behavioural intervention research may be required to assess how communities acquire, maintain, and sustain these food behaviours to design effective interventions to change food taboos and preferences and promote healthy eating among women of reproductive age. Many opportunities exist to address food taboos and preferences which may negatively impact the health and well-being of women of reproductive age using interventions targeting individuals, communities, and the policy environment.

Recommendations

In light of the findings of this study, we present the following recommendations:

Health Workers (Facility and CHWs)

- It is important for health workers to understand the social and symbolic roles of different foods consumed by different target groups in the current study. Food taboos and preferences may have varied implications in adolescent, maternal, and child health outcomes. The taboos and preferences should serve as a yardstick for health workers seeking solutions for a community's nutritional and food safety problems. Thus, healthy eating habits promotion during promotion during the prenatal, postpartum, and lactation period should be emphasised in healthcare facilities and communities.

- During their day-to-day routine and when implementing targeted behaviour change and health education activities, health workers should engage opinion leaders/influential persons and significant others; they have a critical role to play in shaping the food taboos and preferences of women of reproductive age and children.

- Nutrition officials, in collaboration with community health workers, educate the community about appropriate foods for adolescents, children, pregnant and lactating women to consume. The information and education can complement what mothers receive at the ANC clinics. The Ministry of Health should continue using mass media channels (e.g., radio, social media) which are capable of reaching (or hold the potential to reach) a larger segment of the population. One approach may be use of local radio (which exists across the country) and other nationally and locally relevant media.

Community Members

- Findings indicate that some food preferences are a result of availability, variability in purchasing power, and seasonality of foods due to existing food production systems which affect dietary diversity. Community-led efforts should be initiated by community groups with support of local civil society, district council authorities geared towards promoting food availability and dietary diversification to expand food choices for women of reproductive age and children. For instance, programmes implemented by the Tanzania Social Action Fund and other national-level initiatives may provide one of the avenues for promoting nutrition and livelihoods, particularly for disadvantaged and poor households in rural and urban Tanzania.

- Male and female community members should provide the support needed to encourage pregnant women to regularly attend health facilities for ANC services where health workers provide

nutrition information and counselling. Pregnant women and lactating mothers should adhere to healthy eating as advised in the health facility by health care providers and community health workers. In addition, the role of male partners/male engagement in promoting healthy eating among women of reproductive age and children cannot be overemphasised.

- As part of community engagement, parents, influential persons, and community leaders should work together with health and nutrition professionals to engage in continuous dialogue on what food taboos communities can maintain and which need to be eliminated.

Policy Makers

- The Ministry of Health through the Health Promotion section should work with community members to conduct social and behaviour change communication interventions to undo unhealthy food taboos and educate the community on how dietary choices may affect their health.
- Promoting healthy food practices and preferences and discouraging unhealthy food taboos and preferences requires multi-sectoral collaboration. In this regard, the school systems need to continuously engage in efforts to address food preferences and taboos that may be risky to the health of adolescents and children. The school feeding program the government is implementing is an avenue to introduce elements that promote nutritional friendly food practices and preferences among the younger generations.

Researchers

- Both nutritionists and social scientists should conduct research on food taboos' origins and the role they play in different societies to inform the health education and promotion on eating habits among women of reproductive age and children. For instance, one area of research could be investigating how taboos and preferences emerge, evolve, and are sustained over time and space. In an increasingly globalised world, there is potential for other food taboos and preferences to emerge or re-emerge which may require continued exploration and documentation.
- An additional area of research is on how the socio-economic, ecological, geographic, and health system factors interact to shape food preferences among younger generations, particularly adolescent girls in rural and urban areas. For instance, the preference among adolescent girls of the consumption of processed foods such as carbonated drinks, popcorn, processed cereals, and potato/cassava chips (chipsi mayai) may also require additional research. Other areas of research could be exploration of marketing chains and knowledge, attitudes, and practices on consumption of processed foods among young (male and female) generation as well as regulatory issues pertaining to these food items in the market.
- Future research should include conducting dietary recalls to determine consumption patterns of foods to limit among women of reproductive age and adolescent girls.

These findings exclusively emanated from the demand side of food taboos and preferences. Additional research may focus on the supply side of food preferences, especially, food production systems and marketing/processing industry. Such studies may form the fundamental basis for the inclusion of the food processing industry in the food taboos/preferences equation and be part of a broader agenda for improved health and nutrition among women of reproductive age and children in Tanzania.

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Annex 1. Socio-Demographic Characteristics of Study Participants

Table 14. Socio-Demographic Characteristics of Study Participants—IDIs

Region	District	Participant ID	Age	Sex	Occupation	Level of Education
Dar es Salaam	Ubungo DC (Rural)	Significant other	51	Female (F)	Clinical officer	Diploma
		CSO representative	49	Male (M)	Business Administrator [Country manager]	Degree
		Community leader	42	M	Ward executive officer	Diploma
	Kinondoni MC (Urban)	Significant other	30	F	Businesswoman	Form IV*
		Community leader	50	F	Ward executive officer	Degree
Mwanza	Sengerema DC (Rural)	Significant other	48	M	Peasant	Standard (Std) VII**
		Community health worker	59	F	Peasant and CHW	Std VII
	Nyamagana MC (Urban)	Significant other	57	F	House wife	Form IV

Region	District	Participant ID	Age	Sex	Occupation	Level of Education
		Community leader	35	F	Ward executive officer	Degree
		Community health worker	45	M	CHW	Form IV
Kigoma	Kakonko DC (Rural)	Significant other	26	F	Peasant	Form II
		Community health workers	29	M	Peasant	Form IV
Mbeya	Busekelo DC (Rural)	Community health worker	48	F	Community health worker	Std VII
		Significant other	59	M	Peasant	Std VII
		Religion leader	56	M	Shepherd	Std VII
	Mbeya CC (Urban)	Community leader	42	M	Ward executive officer	Form IV
		CSO	32	M	Coordinator advisor manager (Child case management)	Diploma
		Significant other	37	M	Entrepreneur	Std VII

Region	District	Participant ID	Age	Sex	Occupation	Level of Education
Lindi	Lindi MC (Urban)	Significant other	29	F	Entrepreneur	Form IV
		Community health worker	49	F	Community health worker	Std VII
		Community	45	F	Municipal executive officer	Form IV
		Influential person	58	M	Entrepreneur	Std VII
	Liwale DC (Rural)	Significant other	42	M	Community health worker	Std VII
		Influential person	54	M	Peasant	Std VII
Arusha	Arusha CC (Urban)	Significant other	55	F	Peasant	Did not attend school
		Community leader	38	M	Street chairperson	Std VII
		CSO	54	M	Director of Arusha NGOs Network [ANGONET]	University
	Longido DC (Rural)	Significant other	33	F	House wife	Std VII

Region	District	Participant ID	Age	Sex	Occupation	Level of Education
		Community health worker	50	F	Community health worker	Std VII
		Influential person	72	M	Peasant/Pastoralist	Std VII
Singida	Mkalama DC (Rural)	Significant other	40	M	Business man	Std VII
		Community health worker	46	M	Community health worker	Std VII
		Influential person	51	M	Peasant	Std VII
	Singida MC (Urban)	Significant other	57	F	Community health worker	Std VII

* A level of education for ordinary level secondary education. Secondary education classes are labelled in Roman numbers as form I to form IV

**A level of education for completion of primary school in Tanzania. Primary education in Tanzania is seven years and it is labelled in Roman numbers as Standard I up to Standard VII.

Table 15. Socio-Demographic Characteristics of Study Participants—KIIs

Region and District	District	Participant ID	Age	Sex	Occupation	Level of Education
Dar es Salaam	Kinondoni MC (Urban)	District nutrition officer	42	F	Nutrition officer	Degree
Mwanza	Sengerema DC (Rural)	District nutrition officer	54	F	Nutrition officer—(Coordinator)	Diploma
Kigoma	Kakonko DC (Rural)	District nutrition officer	38	M	Nutrition officer	Degree
Mbeya	Mbeya CC (Urban)	District nutrition officer	47	M	Nutrition officer	Degree
Lindi	Liwale CC (Rural)	District nutrition officer	35	M	Nutrition officer	Degree

Region and District	District	Participant ID	Age	Sex	Occupation	Level of Education
Arusha	Longido DC (Rural)	District nutrition officer	41	F	Nutrition officer	Degree
Singida	Mkalama DC (Rural)	District nutrition officer	40	F	Nutrition officer	Degree
	Singida MC (Urban)	District nutrition officer	42	F	Nutrition officer	Degree

Annex 2. Nutrient Composition of Select Dishes

Table 16. Nutrient Values per 100 Grams of Ugali and Components of Chipsi Mayai (French Fries and Egg)

Nutrient	Maize Ugali	French Fries	Egg, Fried
Macronutrients			
Energy (kilocalories)	123.8	249.0	245.2
Total protein (grams [g])	2.7	1.7	11.8
Total fat (g)	1.2	20.1	21.6
Total carbohydrates (g)	25.6	18.0	1.0
Total sugar (g)	0.2	0.2	0.0
Saturated fatty acids (g)	0.2	4.9	13.2
Monounsaturated fatty acids (g)	0.3	0.6	4.5
Polyunsaturated fatty acids (g)	0.5	0.1	1.5
Cholesterol (milligrams [mg])	0.0	3.2	395.7
Fibre (g)	2.4	2.1	0.0
Phytate (mg)	273	17.5	0.0
Vitamins			
Vitamin A in retinol equivalents (micrograms [ug])	0.0	0.0	114.0
Vitamin D (ug)	0.0	0.0	0.6
Vitamin E in tocopherol equivalents	0.3	0.3	1.3
Vitamin C (ug)	0.0	10.8	0.0
Thiamin (mg)	0.1	0.1	0.0
Riboflavin (mg)	0.1	0.0	0.3
Niacin (mg)	1.2	1.2	0.1

Nutrient	Maize Ugali	French Fries	Egg, Fried
Vitamin B6 (mg)	0.1	0.2	0.1
Folate (ug)	11.6	7.5	26.4
Vitamin B12 (ug)	0.0	0.0	0.7
Pantothenic acid (mg)	0.1	0.5	0.8
Minerals			
Calcium (mg)	2.0	4.2	47.3
Phosphorus (mg)	81.2	41.7	160.5
Magnesium (mg)	43.4	20.8	9.4
Potassium (mg)	98.1	325.8	117.7
Sodium (mg)	11.9	4.2	632.1
Iron (mg)	1.2	0.3	1.1
Zinc (mg)	0.6	0.2	1.0
Copper (mg)	0.1	0.2	0.0

Source: Lukmanji et al. 2008

Annex 3. Informed Consent Forms—FGDs

Annex 3a. Informed Consent for FGDs—English

Consent to Participate in the Study Focus Group Discussions

Introduction

Greetings!

My name is..... I am a researcher from .....We are conducting research on food taboos and preferences among mothers, children, and adolescents in selected regions of mainland Tanzania. This study is funded by USAID.

Purpose of the Study

This study has the purpose of collecting information on food taboos and preferences among mothers, children, and adolescents in selected regions of mainland Tanzania. You are being asked to participate in this study because you have particular knowledge and experiences that may be important to the study.

Participation

Taking part in this study is **completely your choice**. If you choose not to participate in the study or if you decide to stop participating in the study you will not come to any harm. You can stop participating in this study at any time, even if you have already given your consent. Refusal to participate or withdrawal from the study will not involve penalty or loss of any benefits to which you are otherwise entitled.

What Participation Involves

If you agree to participate in this study the following will occur:

1. You will be required to sit with a trained interviewer in a private place preferably where other people not involved in this study will not be able to hear what you are discussing. You will be requested to answer questions about food taboos and preferences among mothers, children, and adolescents in your community. The interviewer will be recording your responses in the notebook or tape recorder depending on your willingness for your information to be recorded.
2. No identifying information will be collected from you during this interview.
3. The discussion session will take about one hour. A trained moderator will guide the discussion. The discussion session will be carried out in a private setting.

Confidentiality

I assure you that all the information collected from you will be kept strictly confidential. Only people working in this research study will have access to the information. We will be compiling a report, which will contain responses from several women and youth without any reference to individuals. We will not put your name or other identifying information on the records of the information you provide. Interviews will be done in a private place so that your information is not heard by others. If someone comes close to the place where we will be conducting the interviews, we will stop the interview until they leave.

Risks

Some questions may be sensitive and personal, so you might feel uncomfortable; at the same time, it will take time when you could be doing other productive work. We do not expect any harm to happen to you because of participating in this study. If you feel uncomfortable or distressed, we may give you some time to cool down and decide if you would wish to continue with the interview or refer you to a health facility for more support.

Benefits

The information you provide will help to increase our understanding of food taboos and preferences among mothers, children, and adolescents in our community. This will help in finding the appropriate intervention to help improve nutrition.

In Case of Injury

We do not anticipate that any harm will occur to you or your family as a result of participation in this study. The study does not involve taking samples from your body or any measurements. It is an interview which focuses on common life issues regarding food taboos and preferences among mothers, children, and adolescents.

Who to Contact?

If you ever have questions about this study, you should contact the study coordinator, Principal Investigator **Dr. Germana Leyna**, Tanzania Food and Nutrition Centre (TFNC), P.O. Box 977, Dar es Salaam (Tel. no. 0782847320). If you ever have questions about your rights as a participant, you may call the chairperson, National Health Research Ethics Review Committee (NatHREC), 3 Barack Obama Drive, P.O. Box 9653, **Dar es Salaam, Tanzania.**

Signature

Do you agree?

Participant agrees [__] Participant disagree [__]

I _____ have read/understood the contents in this form. My questions have been answered satisfactorily. I agree to participate in this study.

Signature of participant _____

Signature of witness (if participant cannot read and write) _____

Signature of research assistant _____ Date of signed consent _____

Annex 3b. Informed Consent for FGDs—Kiswahili Version

Fomu ya ridhaa ya kushiriki kwenye mjadala katika kikundi

Somo: Kujifunza kuhusu miiko ya kula na uchaguzi wa vyakula kwa wanawake, vijana na watoto wadogo nchini Tanzania.

Namba ya Utambulisho wa mahojiano: …….

Utangulizi

Habari! Jina langu naitwa ..... ni mtafiti kutoka .....Tunafanya utafiti wenye lengo la kujifunza kuhusu miiko ya kula na uchaguzi wa vyakula kwa wanawake, vijana na watoto wadogo nchini Tanzania. Utafiti huu umefadhiliwa na Shirika la Misaada la Marekani [USAID].

Malengo ya Utafiti

Utafiti huu una lengo la kukusanya taarifa miiko ya kula na uchaguzi wa vyakula kwa wanawake, vijana na watoto wadogo nchini Tanzania. Unaombwa kushiriki katika utafiti huu kwa sababu una uelewa ambao unaweza kuwa muhimu katika utafiti huu.

Ushiriki

Ukikubali kushiriki katika utafiti huu yafuatayo yatatokea:

1. Utakaa na mtafiti aliyepewa mafunzo ya jinsi ya kuhoji atauliza maswali yahusuyo miiko ya kula na uchaguzi wa vyakula kwa wanawake, vijana na watoto wadogo katyika jamii yako. Mhojaji atakuwa ananukuu majibu yako katika daftari au kinasa sauti baada ya kuomba ridhaa ya kunasa sauti yako na wewe kuridhia.
2. Hakuna taarifa zozote za utambulisho tutakazokusanya wakati wa utafiti isipokua umri, kazi/shughuli za kazi, kiwango cha elimu na/ hali yako ya ndoa.
3. Mjadala utachukua takriban saa moja. Majadiliano yataongozwa na mwezeshaji aliyepata mafunzo. Mjadala utafanyika eneo lenye usiri.

Usiri

Timu ya utafiti inakuhakikishia kuwa taarifa zote zitakazokusanywa kutoka kwako zitakua ni za siri; ni watu wanaofanya kazi katika utafiti huu tu ndio wanaweza kuziona taarifa hizi. Tutajumuisha ripoti ambayo itakuwa na majibu kutoka kwa washiriki kadhaa bila kuweka vitambulisho vyao. Hatutaweka jina lako au taarifa yoyote ya utambulisho kwenye kumbukumbu za taarifa utakazotupa. Mahojiano yatafanyika katika sehemu yenye usiri na usalama kama madarasani au ofisi za serikali za mitaa.

Madhara

Utaulizwa maswali juu miiko ya kula na uchaguzi wa vyakula kwa wanawake, vijana na watoto wadogo katyika jamii yako. Vilevile tutachukua muda wako badala ya kwenda kwenye shughuli nyingine za maendeleo. Hakuna madhara yoyote yanayotegemewa kwa kutokana na ushiriki wako katika utafiti huu.

Haki ya kujitoa katika utafiti

Ushiriki katika utafiti huu ni wa hiari, kama utachagua kutokushiriki au utaamua kusimamisha ushiriki, hutapata madhara yoyote. Unaweza kusimamisha kushiriki katika utafiti huu muda wowote hata kama ulisharidhia kushiriki. Kukataa kushiiriki au kujitoa katika utafiti hakutasababisha adhabu yoyote au upotevu wa faida yoyote unayotakiwa kupata.

Faida

Endapo utakubali kushiriki katika utafiti huu, majibu yako yatakuwa na mchango mkubwa katika matokeo ya jumla ya utafiti huu ambayo yanatarajia kuleta mapendekezo ambayo yatasidia kupunguza ikiwezekana kuondoa kabisa tatizo la miiko ya kula na uchaguzi wa vyakula kwa wanawake, vijana na watoto wadogo nchini Tanzania.

Endapo utadhurika

Hatutegemi madhara yoyote kutokea kwa kushiriki kwenye katika utafiti huu. Utafiti huu hautahusisha uchukuaji wa sampuli kutoka kwenye mwili wako. Kutakuwa na mazungumzo ya masuala ya kawaida katika maisha kama matumizi ya dawa.

Mawasiliano

Kama una maswali katika utafiti huu unaweza kuwasiliana na Mtafiti Mkuu Dr. Germana H. Leyna, Taasisi ya Chakula na Lishe, S.L. P. 977 Dar es Salaam (Simu. no.0782847320). Kama utakua na maswali yoyote kuhusu haki zako kama mshiriki unaweza kupiga simu kwa Mwenyekiti, Kamati ya Taifa ya Maadili ya Utafiti wa Afya, S.L.P. 9653, Dar es Salaam. Simu namba:

Unakubali?

Mshiriki amekubali [__] Mshiriki amekataa [__]

Mimi _____ nimesoma/nimeielewa hii fomu, maswali yangu yamejibiwa. Nakubali kushiriki katika utafiti huu.

Sahihi ya mshiriki: _____

Sahihi ya shahidi (kama hawezi kusoma na kuandika): _____

Sahihi ya mtafiti mwandamizi: _____

Tarehe ya makubaliano: …….

Annex 4. Informed Consent Forms—IDIs

Annex 4a: Informed Consent for IDIs—English

Consent to Participate in the Study In-Depth Interview

Introduction

Greetings!

My name is..... I am a researcher from .....We are conducting research on food taboos and preferences among mothers, children, and adolescents in selected regions of mainland Tanzania. This study is funded by USAID.

Purpose of the Study

This study has the purpose of collecting information about food taboos and preferences among mothers, children, and adolescents in selected regions of mainland Tanzania. You are being asked to participate in this study because you have particular knowledge and experiences that may be important to the study.

Participation

Taking part in this study is **completely your choice**. If you choose not to participate in the study or if you decide to stop participating in the study you will not come to any harm. You can stop participating in this study at any time, even if you have already given your consent. Refusal to participate or withdrawal from the study will not involve penalty or loss of any benefits to which you are otherwise entitled.

What Participation Involves

If you agree to participate in this study, the following will occur:

1. You will be required to sit with a trained interviewer in a private place preferably where other people not involved in this study will not be able to hear what you are discussing. You will be requested to answer questions about food taboos and preferences among mothers, children, and adolescents in your community. The interviewer will be recording your responses in the notebook or tape recorder depending on your willingness for your information to be recorded.
2. No identifying information will be collected from you during this interview.
3. You will be interviewed only once by a trained interviewer for approximately 40 minutes in a private setting.

Confidentiality

I assure you that all the information collected from you will be kept strictly confidential. Only people working in this research study will have access to the information. We will be compiling a report, which will contain responses from several women and youth without any reference to individuals. We will not put your name or other identifying information on the records of the information you provide. The interview will be done in a private place so that your information is not heard by others. If someone comes close to the place where we will be conducting the interviews, we will stop the interview until they leave.

Risks

Some questions may be sensitive and personal, so you might feel uncomfortable; at the same time, it will take time when you could be doing other productive work. We do not expect any harm to happen to you because of participating in this study. If you feel uncomfortable or distressed, we may give you some time to cool down and decide if you would wish to continue with the interview or refer you to a health facility for more support.

Benefits

The information you provide will help to increase our understanding of food taboos and preferences among mothers, children, and adolescents in our community. This will help in finding the appropriate intervention to help improve nutrition.

In Case of Injury

We do not anticipate that any harm will occur to you or your family as a result of participation in this study. The study does not involve taking samples from your body or any measurements. It is an interview which focuses on common life issues regarding food taboos and preferences among mothers, children, and adolescents.

Who to Contact?

If you ever have questions about this study, you should contact the study coordinator, who is Principal Investigator **Dr. Germana Leyna**, Tanzania Food and Nutrition Centre (TFNC), P.O. Box 977, Dar es Salaam (Tel. no. 0782847320). If you ever have questions about your rights as a participant, you may call the chairperson, National Health Research Ethics Review Committee (NatHREC), 3 Barack Obama Drive, P.O. Box 9653, **Dar es Salaam, Tanzania.**

Signature

Do you agree?

Participant agrees [__] Participant disagrees [__]

I _____ have read/understood the contents in this form. My questions have been answered satisfactorily. I agree to participate in this study interview.

Signature of participant _____

Signature of witness (if participant cannot read and write) _____

Signature of research assistant _____ Date of signed consent _____

Annex 4b. Consent Form for IDI: Kiswahili

Fomu ya ridhaa ya kushiriki kwenye mahojiano ya kina kwenye utafiti

Somo: Kujifunza kuhusu miiko ya kula na uchaguzi wa vyakula kwa wanawake, vijana na watoto wadogo nchini Tanzania. Utafiti huu unafadhiliwa na Shirika la Misaada la Marekani [USAID].

Utangulizi

Habari! Jina langu naitwa .....ni mtafiti kutoka .....Tunafanya utafiti wenye lengo la kujifunza kuhusu miiko ya kula na uchaguzi wa vyakula kwa wanawake, vijana na watoto wadogo nchini Tanzania. Utafiti huu umefadhiliwa na Shirika la Misaada la Marekani [USAID].

Malengo ya Utafiti

Utafiti huu una lengo la kukusanya taarifa miiko ya kula na uchaguzi wa vyakula kwa wanawake, vijana na watoto wadogo nchini Tanzania. Unaombwa kushiriki katika utafiti huu kwa sababu una uelewa ambao unaweza kuwa muhimu katika utafiti huu.

Ushiriki

Ukikubali kushiriki katika utafiti huu yafuatayo yatatokea:

1. Utakaa na mhojaji mtafiti aliyepewa mafunzo ya jinsi ya kuhoji atauliza maswali yahusuyo miiko ya kula na uchaguzi wa vyakula kwa wanawake, vijana na watoto wadogo katyika jamii yako. Mhojaji atakuwa ananukuu majibu yako katika daftari au kinasa sauti baada ya kuomba ridhaa ya kunasa sauti yako na wewe kuridhia.
2. Hakuna taarifa zozote za utambulisho tutakazokusanya wakati wa utafiti isipokua umri, kazi/shughuli za kazi, kiwango cha elimu na/ hali yako ya ndoa.
3. Utahojiwa mara moja tu kwa takribani dakika 40 na mhojaji aliyepatiwa mafunzo.

Usiri

Timu ya utafiti inakuhakikishia kuwa taarifa zote zitakazokusanywa kutoka kwako zitakua ni za siri; ni watu wanaofanya kazi katika utafiti huu tu ndio wanaweza kuziona taarifa hizi. Tutajumuisha ripoti ambayo itakuwa na majibu kutoka kwa washiriki kadhaa bila kuweka vitambulisho vyao. Hatutaweka jina lako au taarifa yoyote ya utambulisho kwenye kumbukumbu za taarifa utakazotupa. Mahojiano yatafanyika katika sehemu yenye usiri na usalama kama madarasani au ofisi za serikali za mitaa.

Madhara

Utaulizwa maswali juu miiko ya kula na uchaguzi wa vyakula kwa wanawake, vijana na watoto wadogo katyika jamii yako. Vilevile tutachukua muda wako badala ya kwenda kwenye shughuli nyingine za maendeleo. Hakuna madhara yoyote yanayotegemewa kwa kutokana na ushiriki wako katika utafiti huu.

Haki ya kujitoa katika utafiti

Ushiriki katika utafiti huu ni wa hiari, kama utachagua kutokushiriki au utaamua kusimamisha ushiriki, hutapata madhara yoyote. Unaweza kusimamisha kushiriki katika utafiti huu muda wowote hata kama ulisharidhia kushiriki. Kukataa kushiiriki au kujitoa katika utafiti hakutasababisha adhabu yoyote au upotevu wa faida yoyote unayotakiwa kupata.

Faida

Endapo utakubali kushiriki katika utafiti huu, majibu yako yatakuwa na mchango mkubwa katika matokeo ya jumla ya utafiti huu ambayo yanatarajia kuleta mapendekezo ambayo yatasidia kupunguza ikiwezekana kuondoa kabisa tatizo la miiko ya kula na uchaguzi wa vyakula kwa wanawake, vijana na watoto wadogo nchini Tanzania.

Endapo utadhurika

Hatutegemi madhara yoyote kutokea kwa kushiriki kwenye katika utafiti huu. Utafiti huu hautahusisha uchukuaji wa sampuli kutoka kwenye mwili wako. Kutakuwa na mazungumzo ya masuala ya kawaida katika maisha kama matumizi ya dawa.

Mawasiliano

Kama una maswali katika utafiti huu unaweza kuwasiliana na Mtafiti Mkuu Dr. Germana H. Leyna, Taasisi ya Chakula na Lishe, S.L. P. 977 Dar es Salaam (Simu. no.0782847320). Kama utakua na maswali yoyote kuhusu haki zako kama mshiriki unaweza kupiga simu kwa Mwenyekiti, Kamati ya Taifa ya Maadili ya Utafiti wa Afya, S.L.P. 9653, Dar es Salaam. Simu namba:

Unakubali?

Mshiriki amekubali [__] Mshiriki amekataa [__]

Mimi _____ nimesoma/nimeielewa hii fomu, maswali yangu yamejibiwa. Nakubali kushiriki katika utafiti huu.

Sahihi ya mshiriki: _____

Sahihi ya shahidi (kama hawezi kusoma na kuandika): _____

Sahihi ya mtafiti mwandamizi: _____

Tarehe ya makubaliano: ……..

Annex 5. Parent/Guardian Consent Forms

Annex 5a. Parental/Guardian Consent—English

Information Sheet for Parental Consent of Participation of Their Adolescent Aged 15 to 17 years

Study Title: Food Taboos and Preferences Among Women of Reproductive Age in Mainland Tanzania

Introduction and Purpose of This Form

My name is _____. I am working on a research study. This study is done by Tanzania Food and Nutrition Centre (TFNC). We are asking your permission to invite your youth who is below 18 years to join this study. This form gives you the information you will need to help you decide whether to provide permission for us to invite your youth to participate in this research. You can choose if you would like to read the form or have it read to you. You should feel free to ask questions at any point as we go through the form. After going through the form, you can also ask any questions that you have about the research or this information that is not clear. When I have answered all your questions, you can decide if you want to provide permission for us to invite your youth to participate. This process is called informed consent. Do you have any questions at this point?

What is the Purpose of This Study?

The purpose of the study is to collect information on the food taboos and preferences among women of reproductive age in eight regions of mainland Tanzania. We would like to invite your youth to participate because they are under 18 years of age. Providing permission is voluntary. Saying no will in no way affect the care your youth receives at the health facility. Do you have any questions on this part of the form?

What is Involved?

If you provide permission for your youth to participate, we will then ask your youth if they are interested in participating. Their participation is completely voluntary: they do not have to talk to us if they do not want to, even if you give permission for us to talk with them. If they choose to participate, we will ask them to answer some questions about their experiences with food taboos and preferences. The discussion will be in a private room, where no one can hear the conversation. Your youth's answers will not be shared with anyone, not even with you or with the doctors or nurses. The answers will be completely confidential. Do you have any questions on what is involved if you choose to participate?

Will the Youth's Answers Be Confidential?

We will not collect any information from your youth that can identify them. No one, not even the research team, will be able to know who they are or the answers given by your youth, because there will be no names, addresses, or phone numbers on the questionnaire. The only place your youth's name will appear is on a form similar to this one, called an assent form. If you decide to allow us to invite your youth, and your youth also decides they would like to participate, they will sign a form like this one to show that they have agreed to participate. The forms you and your youth sign to indicate they want to participate cannot be connected to the answers they provide. This form will be kept in a locked box

separately from the form that includes their answers to the questions that we will ask, called the study records.

We will keep study records secure, either in locked boxes or cabinets, or on password-protected computers. The research team will keep study records and may use it in the future, but no one will know the information comes from your youth. The results of this research will only be shared in a form that combines results from all the youth who participate. Individual youth's answers will never be shared or will only be seen by members of the research team and the names of people who participate will not be shared. The combined results will be shared with the health facilities, and with regional and national health authorities, to help design programs to improve nutrition among women and adolescents. The results may also be published in written form, but will never be able to be linked to an individual participant. Do you have any questions for me about confidentiality?

What Are the Risks, Benefits, and Compensation to Participating?

A possible risk to taking part in the study is that people outside the research team may find out what we talk about with your youth. To keep this risk to a minimum, we will keep your youth's name, which will be on a form similar to this one, separate from their responses. No one will be able to match the information your youth shares on the questionnaire to them or to you. If you decide to allow your youth to participate, we will also keep your form completely confidential and in a locked box.

There is a chance that some of our questions or discussions may make your youth uncomfortable or cause emotional stress. If so, your youth does need to answer the question. They can also ask to take a break or end the survey or interview at any time.

There are no direct benefits to you or your youth for participation in the study. We hope your youth will benefit from the intervention that will happen within the health system after the data collection is completed. The information collected will help design programs and help TFNC to further develop new tools and interventions on food taboos and see how existing ones can be improved.

Does Your Youth Have to Participate?

No. Your decision to allow your youth to participate is completely voluntary. You should feel free to say no. Deciding not to provide permission for your youth to participate will have no penalty for you or your youth and will not affect the service your youth receives. If you do not wish for your youth to participate, we will respect this and will not ask why. Even if you give permission for your youth to be in the study, we will also ask your youth if they want to participate and they do not have to participate if they do not want to.

We have come to the end of the form. Do you have any questions about the research or this form, what we have just discussed, that you would like to ask me?

If You Have Questions Later

If you have any questions or would like any more information about the study after today, please contact:

Dr. Germana H. Leyna

Email: gerryleyna@yahoo.com

Phone: 0782847320

For independent advice on your youth's rights as a research participant, please contact:

Chairperson

National Health Research Ethics Committee, National Institute for Médical Research (NIMR)

3 Barabara ya Barack Obama Avenue, P.O. Box, 11101 Dar es Salaam

Email: headquarters@nimr.or.tz

Tel: 255-22-2121400

Consent Form: Statement of Declaration

Please initial below:

I confirm that I have read, or have been read, and understand the information sheet for the above research and have had the opportunity to ask questions.

I understand that I will be given time to consider whether I want to provide permission for my youth to participate or not.

I understand that my signature below means that I have agreed to allow the research team to invite my youth to participate in the study.

I understand that giving permission for my youth to participate is voluntary and that my youth is also free to choose not to participate.

I understand that I will be given a copy of this consent form, if I would like one.

I understand that the researchers will keep the information shared by my youth, and my permission for them to participate, confidential.

Parental/Guardian Consent Form for Permission to Invite Youth aged 15–18 Years to Participate In Research

I have read (or have had explained to me) the consent information about this research as contained in the Participant Information Sheet. I have had the opportunity to ask questions about it and any questions I have asked and have been answered to my satisfaction. I understand that giving my consent for my youth to participate is entirely voluntary.

If you provide permission for your youth to participate in this study, please sign your name below. If you sign here, it means you have given permission for your youth to participate in this study.

_____ _____

Parent/Guardian Signature or thumbprint Date

_____

Parent/Guardian Name (print)

_____ _____

Signature of Person Conducting Consent Discussion Date

_____

Name of Person Conducting Consent Discussion (*print*)

One copy for parent/guardian if they want a copy; one copy for research team

Annex 5b. Idhini Ya Wazazi/Walezi: Fomu Ya Maelezo Kwa Ajili Ya Idhini Ya Wazazi/Walezi Kwa Ajili Ya Ushiriki Wa Vijana Wenye Umri wa miaka 15 hadi 17-Kiswahili

Utafiti kuhusu mila na desturi zinazohusu ulaji wa vyakula kwa wanawake na wasichana walio katika umri wa kuzaa nchini Tanzania

Utambulisho na Lengo la fomu hii

Jina langu ni _____. Ninafanya kazi katika utafiti. Utafiti huu unafanywa na Taasisi ya Chakula na Lishe Tanzania (TFNC). Tunapenda kukuomba ruhusa ya kumualika kijana wako mwenye umri wa chini ya miaka 18 kujiunga na utafiti. Fomu hii inakupatia maelezo utakayohitaji kuamua kumruhusu kijana wako kushiriki kwenye utafiti. Unaweza kuchagua kusoma au kusomewa fomu hii. Kuwa huru kuuliza maswali wakati wowote tukiwa tunapitia fomu hii. Baada ya kupitia fomu hii, unaweza kuuliza maswali yoyote uliyo nayo kuhusu utafiti huu na kitu kingine chochote kuhusu utafiti huu au kuhusu fomu hii ambacho hakijaeleweka. Nitakapokuwa nimekujibu maswali yako yote, unaweza kuamua kama unataka kumruhusu kijana wako kushiriki au kutoshiriki. Utaratibu huu unaitwa 'utoaji idhini'. Je, una maswali yoyote katika kipengele hiki?

Je, lengo la huu ni nini?

Lengo la utafiti huu ni kukusanya taarifa kuhusu uzoefu wa vijana kuhusu mila na desturi zinahusinana na vyakula kwa wanawkae na wasichana walio katika umri wa kuzaa nchini Tanzania, katika mikoa minane (8). Taarifa hizi zitatumika kuandaa program za kuimarisha huduma za lishe zinazotolewa kwa vijana na wanawake walio katika umri wa kuzaa katika eneo hili na kwingineko nchini. Tungependa kumualika kijana wako kuushiriki kwa kuwa ana umri chini ya miaka 18 na ndani ya eneo letu la utafiti. Kutoa ruhusa ya yeye kushiriki ni hiari kabisa. Kusema hapana hakutaathiri huduma za afya kijana au wewe mwenyewe mnazopata katika vituo va kutolea huduma za afya. Je, una maswali yoyote katika kipengele hiki cha fomu?

Ushiriki unahusisha nini?

Kama utatoa ruhusa kwa kijana wako kushiriki, Tutamuomba kijana wako aje kwenye klinik inayofuata kama anapenda kushiriki. Ushiriki wake ni wa hiari kabisa: hakuna ulazima wa yeye kutuambia kuwa hataki kushiriki hata kama umetupatia ruhusa ya kuzungumza naye lakini hataki kushiriki. Kama ataamua kushiriki, tutamuomba ajibu baadhi ya maswali kuhusu uzoefu wake na matazamo wake juu ya mila na deaturi zinazohusiana na ulaji wa vyakula na huduma nyingine unazopokea katika kituo cha kutolea huduma za afya. Ushiriki katika utafiti huu utachukua muda wake wa takriban saa moja na nusu na mazungumzo yatafanyika kwenye chumba cha siri kilichopo katiak eneo hili kama vile ofisi za serikali, vituo vya kutolea huduma za afya au mhali pengine panapofaa ambapo hakuna mtu atakayeweza kusikia mazungumzo yetu. Je, una maswali yoyote yanayohusu nini kunahusika ikiwa utaamua ashiriki?

Je, majibu ya kijana wako yakakuwa ya siri?

Hatutakusanya taarifa zozote kutoka kwa kijana wako ambazo zitamtambulisha. Hakuna mtu yeyote hata kutoka kwenye timu ya utafiti atakayeweza kumjua yeye ni nani au majibu yake kwa sababu hakutakuwa na majina, anuani au namba za simu kwenye mwongozo wa mazungumzo yetu. Mahali pekee ambapo jina la kijana wako litatokea ni kwenye fomu hii inayoitwa fomu ya idhini. Kama utaamua kuruhusu kijana wako ashiriki, atasaini fomu kama hii kumaanisha kuwa amekubali kushiriki. Fomu ambazo wewe na

kijana wako mtasaini kumaanisha amekubali ushiriki haziwezi kuunganishwa na majibu yake. Fomu hii itatunzwakwenye boksi lililofungwa na litakuwa tofauti na dodoso lenye majibu yako kwa maswali tutakayokuuliza yanayoitwa rekodi za utafiti.

Tutatunza rekodi za utafiti kwa usalama aidha kwenye maboksi au makabati yaliyofungwa, au kwenye kompyuta zenye nenosiri. Timu ya utafiti itatunza rekodi za utafiti na naweza kuzitumia wakati ujao, lakini hakuna mtu atakayejua taarifa zilizotoka kwa kijana wako. Matokeo ya utafiti huu yatashirikishwa kwa wengine katika namna ambayo itajumuisha watu wote walioshiriki. Majibu ya mshiriki binafsi kamwe hayatashirikishwa wengine au kuonekana na yeyote zaidi ya timu ya utafiti na majina ya washiriki hayataoneshwa. Matokeo yaliyojumuishwa yatashirikishwa maeneo mbali mbali ya nchia na mamlaka za Mikoa na Taifa ili kusaidia kuunda program za kuboresha huduma za lishe kwa vijana na wanawake. Matokeo yanaweza pia kuchapishwa katika hali ya maandishi, lakini kamwe hayataweza kuunganishwa na mshiriki binafsi. Je, una maswali yoyote kwangu kuhusu usiri?

Je, kuna hatari, faida na fidia gani za kushiriki?

Uwezekano wa hatari ya kushiriki kwenye utafiti ni kwamba baadhi ya watu nje ya timu ya utafiti wanaweza kugundua tunayozungumza na kijana wako. Ili kupunguza hatari hii, tutatunza jina la kijana wako, ambalo litakuwa kwenye fomu kama hii mbali na majibu yake. Hakuna atakayeweza kuoanisha taarifa kijana wako atakazotoa kwenye mwongozo wa majadiliano na wewe au yeye. Kama utamruhusu kijana wako ashiriki, pia tutatunza fomu yako kwa siri kwenye boksi lililofungwa.

Kuna uwezekano kuwa baadhi ya maswali au majadiliano yetu yakamfanya kijana wako asijisikie vizuri au kumsababishia mfadhaiko wa hisia. Kama ndivyo, kijana wako halazimiki kuyajibu maswali hayo. Anaweza pia kuomba kupumzika au kuacha kushiriki majadiliaono muda wowote.

Hakuna faida za moja kwa moja kwa kijana wako kushiriki kwenye utafiti. Tunatumaini atafaidika na program zitakazofanyika kwa watoa huduma za afya baada ya ukusanyaji wa taarifa kufanyika. Taarifa zitakazokusanywa zitasaida kuunda afua kwa ajili ya watoa huduma wote (sio tu wafanyakazi wa kitengo cha ushauri wa lishe) ili kufanya huduma ziwe rafiki zaidi na zipatikane kwa urahisi zaidi. Je, una maswali yoyote kwangu katika kipengele hiki?

Je, kijana wako analazimika kushiriki?

Hapana: Uamuzi wa kumruhusu kijana wako kushiriki ni wa hiari kabisa. Jisikie huru kusema hapana. Kuamua kutotoa ruhusa kwa kijana wako kushiriki hakutakuwa na adhabu kwako au kwa kijana wako na hakutaathiri kwa namna yoyote ile huduma ambazo kijana wako anapatiwa kwenye vituo vya kutolea huduma za afya. Kama hutopenda kijana wako ashiriki, tutaheshimu uamuzi wako na hatutokuuliza kwanini hutaki ashiriki. Kama utatoa ruhusa kwa kijana wako kushiriki kwenye utafiti, pia tutamuuliza kijana wako kama anapenda kushiriki na hatolazimishwa kushiriki kama hapendi kushiriki.
Tumefikia mwisho wa fomu. Je, una maswali yoyote kuhusu utafiti au fomu hii, masuala tuliyojadili, ambayo ungependa kuniuliza?

Kama una maswali baadae

Kama una maswali yoyote au ungependa taarifa zaidi kuhusu utafiti huu leo au baadae, tafadhali wasiliana na:

Dr. Germana H. Leyna

Barua pepe: gerryleyna@yahoo.com

Simu: 0782847320

Kwa ajili ya ushauri binafsi kuhusu haki zako kama mshiriki wa utafiti, tafadhali wasiliana na:

Mwenyekiti

Kamati ya Maadili ya Tafiti, Taasisi ya Taifa ya Tafiti za Magonjwa ya Binadamu, (NIMR)

Mtaa wa 3 Barabara ya Barack Obama, S.L.P 9653, 11101 Dar es Salaam

Barua pepe: headquarters@nimr.or.tz

Simu: 255-22-2121400

Fomu Ya Idhini: Tamko La Kukubali

Tafadhali weka alama kwenye kisanduku:

Ninathibitisha kuwa nimesoma, au nimesomewa, na kuelewa fomu ya maelezo ya utafiti huu na nimepata fursa ya kuuliza maswali.

Ninaelewa kuwa nitapewa muda wa kuamua kama kijana wangu ashiriki au asishiriki kwenye utafiti.

Ninaelewa kuwa sahihi yangu hapo chini inamaanisha kuwa nimeridhia kijana wangu ashiriki kwenye huu utafiti.

Ninaelewa kuwa ushiriki wa kijana wangu ni wa hiari and kwamba yuko huru kujitoa muda wowte bila kutoa sababu yoyote.

Ninaelewa kuwa nitapatiwa nakala ya hii fomu ya idhini.

Ninaelewa kuwa watafiti watatunza taarifa zake kwa usiri

Fomu Ya Idhini Ya Wazazi/Walezi Kwa Ajili Ya Ruhusa Ya Kuwaalika Vijana Wa Umri Wa Miaka 15 Hadi 17 Kushiriki Kwenye Utafiti

Nimesoma (nimeelezwa) taarifa za idhini kuhusu utafiti kama ilivyo kwenye Nakala ya Taarifa kwa Mshiriki. Nimekuwa na fursa ya kuuliza maswali kuhsu utafiti na nimejibiwa nikaridhika. Ninaelewa kuwa kutoa idhini kwa ajili ya kijana wangu kushiriki ni hiari kabisa.

Kama utatoa ruhusa kwa kijana wako kushiriki kwenye utafit huu, tafadhali weka sahihi hapa chini. Ukiweka sahihi hapa unakuwa umtoa ruhusa kwa kijana wako kushiriki kwenye utafiti huu.

_____ _____

Sahihi ya mzazi/mlezi au alama ya kidole gumba Tarehe

_____

Jina la Mzazi/mlezi (andika)

_____ _____

Sahihi ya mtu anayefanya mazungumzo ya kuomba Idhini Tarehe

_____

Jina la mtu anayefanya mazungumzo ya kuomba Idhini (andika)

Nakala 1 kwa ajili ya Mzazi/ mlezi kama atahitaji; nakala 1 kwa ajili ya timu ya utafiti

Annex 6. Interview Guides

Annex 6a. In-Depth Interview Guide for Nutrition Officers—English

Kindly, tell us about your age, education level, position, and duration in service [**record gender as observed**].

1. Can you briefly explain to me your roles as nutrition officer in this district/municipality?
2. What are the common foods consumed in this community? (Probe: How does it vary by season?)
3. What kind of foods are usually consumed by women in particular? (Probe for the reasons for consumption of specific types of foods by *women*; religious beliefs, ethnicity, traditional beliefs, norms, availability, income/food prices, and others.)

   Probe: When they have the choice, what do women prefer to eat? What are the reasons for their preference?
4. What kinds of foods are usually consumed by adolescent girls (15–25 years of age)? (Probe for the reasons for consumption of specific types of foods by adolescents: food choices, religious beliefs, ethnicity related, traditional beliefs, norms, availability, income/food prices, and others.)

   Probe: When they have the choice, what do adolescent girls prefer to eat? What are the reasons for their preference?
5. How do women usually change their diets during pregnancy? (**Probe** for the reasons for consumption of specific types of foods by women; food choices, religious beliefs, ethnicity related, traditional beliefs, norms, availability, income/food prices, and others. How appropriate are these changes? Which ones should be perpetuated and why? Which ones should be changed and why?)
6. What foods are pregnant mothers supposed to eat? (Probe for the reasons. What are specific beliefs and conceptions about permitted and encouraged food items in this community?)

   Probe: What foods should pregnant women not eat? (Probe for the reasons. What are specific beliefs and conceptions about restricted food items in this community?)

   Probe: What foods should women eat after pregnancy? (Probe for the reasons. What are specific beliefs and conceptions about permitted and encouraged food items in this community?)

   Probe: What foods should women not eat after pregnancy? (Probe for the reasons. What are specific beliefs and conceptions about restricted food items in this community?)

   Probe: What foods should women eat when breastfeeding? (Probe for the reasons. What are specific beliefs and conceptions about permitted and encouraged food items in this community?)

   Probe: What foods should women not eat when breastfeeding? (Probe for the reasons. What are specific beliefs and conceptions about restricted food items in this community?)
7. What foods are important to feed children under two years of age? (Probe for the reasons for consumption of specific types of foods by children; food choices, religious beliefs, ethnicity related, traditional beliefs, norms, availability, income/food prices, and others.) How appropriate are these foods for young children? Which ones should be perpetuated and why? Which ones should be changed and why?)

   Probe: What foods should children under two years not eat? (Probe for the reasons. What are specific beliefs and conceptions about restricted food items in this community?)

8. In your family or community, what efforts do you take to ensure that women of reproductive age and children access and consume appropriate food items?

   Probe: What efforts are taken by others in the community? (Probe for existing interventions at local and national level.)

9. What kind of nutrition counselling or education, if any, is available here? (Probe: Who gives them nutrition education [community health workers, health care providers—nurse or doctor]. What are they told during nutrition counselling and education?)

   Probe: What are the existing sources of information on appropriate food items to be consumed by women of reproductive age and children? (Probe: issues being communicated and perceived strengths and weaknesses).

10. What can be done to provide nutrition education for women and children appropriately? (Probe: communication channels choices, models of information delivery, their strengths and weaknesses).

Annex 6b. Mwongozo wa mahojiano ya kina kwa Maafisa Lishe-Kiswahili

Naomba unieleze kuhusu—

Umri, elimu, cheo [andika jinsia]

1. Je unaweza kunielezea kidogo kuhusu majukumu yako kama afisa lishe wa wilaya/manispaa?
2. Je ni vyakula gani vinavyoliwa kwa wingi katika jamii hii? (**Dadisi:** Inatofautianaje kilingana na vipindi vya mwaka?)
3. Je ni vyakula vya aina gani wanawake hupendelea kula? (**Dadisi:** Kuhusu sababu zinazopelekea wanawake kupendelea ivyo vyakula; Imani za kidini, mambo ya mila na desturi, upatikanaji, kipato/bei za vyakula, na mengineyo)

   Dadisi: Wakati wakiwa na machaguo, ni nini hasa hupendelea kula? Ni zipi hasa sababu zinazowapelekea kuwa na machaguzi hayo?

4. Je ni vyakula vya aina gani wasichana waliobalehe (miaka 15–25) hupendelea kula? (**Dadisi:** Kuhusu sababu zinazopelekea wasichana balehe kupendelea kula vyakula ivyo?; Imani za kidini, mambo ya mila na desturi, upatikanaji, kipato/bei za vyakula, na mengineyo)

   Dadisi: Wakati wakiwa na machaguo, ni nini hasa hupendelea kula? Ni zipi hasa sababu zinazowapelekea kuwa na machaguzi hayo?

5. Je ni kwa namna gani wanawake hubadilisha milo yao kipindi wakiwa wajawazito? (**Dadisi:** Sababu maalumu zinazowapelekea wanawake kula aina Fulani ya vyakula: Imani za kidini, mambo ya mila na desturi, upatikanaji, kipato/bei za vyakula, na mengineyo) Je ni kwa namna gani mabadiliko hayo yapo sahihi? Ni sababu ipi moja inayotakiwa kuendelezwa na kwa sababu gani? Ni ipi inayotakiwa ibadilishwe na kwasababu zipi?
6. Je ni vyakula gani ambavyo wanawake wajawazito wanapaswa kula? (**Dadisi:** Sababu ni zipi. Je ni zipi Imani na fikira kuhusu vyakula vilivyoruhusiwa na vile vinavyoshauriwa kwenye jamii?

   Dadisi: Je ni vyakula vipi ambavyo wanawake wajawazito hawaruhusiwi kula? (Je ni zipi Imani na fikira kuhusu vyakula vilivyoruhusiwa na vile vinavyoshauriwa kwenye jamii?

   Dadisi: Je ni vyakula gani ambavyo wanawake wanakula baada ya ujauzito? (**Dadisi:** Sababu ni zipi. Je ni zipi Imani na fikira kuhusu vyakula vilivyoruhusiwa na vile vinavyoshauriwa kwenye jamii?

Dadisi: Je ni vyakula vya aina gani ambavyo wanawake wajawazito hawaruhusiwi kula baada ya ujauzito? (**Dadisi:** Sababu ni zipi. Je ni zipi Imani na fikira kuhusu vyakula vilivyoruhusiwa na vile vinavyoshauriwa kwenye jamii?

Dadisi: Je ni vyakula vya aina gani wanawake wanashauriwa kula kipindi wananyonyesha? Sababu ni zipi. Je ni zipi Imani na fikira kuhusu vyakula vilivyoruhusiwa na vile vinavyoshauriwa kwenye jamii?

Dadisi: Je ni vyakula vya aina gani ambavyo wanawake hawatakiwi kula kipindi wananyonyesha? Sababu ni zipi. Je ni zipi Imani na fikira kuhusu vyakula vilivyoruhusiwa na vile vinavyoshauriwa kwenye jamii?

7. Je ni vyakula vya aina gani vinaumuhimu kwa watoto chini ya miaka 2? (**Dadisi**: Sababu maalumu zinazowapelekea watoto chini ya miaka 2 kula aina Fulani ya vyakula: Imani za kidini, mambo ya mila na desturi, upatikanaji, kipato/bei za vyakula, na mengineyo) Je ni kwa namna gani mabadiliko hayo yapo sahihi? Ni sababu ipi moja inayotakiwa kuendelezwa na kwa sababu gani? Ni ipi inayotakiwa ibadilishwe na kwasababu zipi?

   Dadisi: Je ni vyakula gani ambavyo watoto chini ya miaka 2 hawali? (**Dadisi:** Je sababu maalumu ya kiimani na kifikira kuhusu vyakula ivyo vilivyokatazwa katika jamii hii?

8. Katika familia au jamii yako, unatumia mikakati ipi ili kuhakikisha wanawake na watoto wanapata na kula vyakula stahiki?

   Dadisi: Je mikakati ipi inatumiwa na wengine kwenye jamii? (**Dadisi:** Afua zilizopo kwenye ngazi ya jamii na taifa.)

9. Je ni aina gani ya ushauri au elimu ya lishe, kama ipo, inayopatikana hapa? (**Dadisi**: Ni nani anawapa wao elimu ya lishe (Wahudumu wa afya ngazi ya jamii, watoa huduma za afya kama manesi au madaktari). Je ni kipi wanachosema wakati wa kutoa ushauri au elimu ya lishe.

   Dadisi: Ni zipi vyanzo vya taarifa juu ya vyakula sahihi vinavyotakiwa kuliwa na wanawake walio katika umri wa kuzaa na watoto? (**Dadisi:** Taarifa zote zinazosemwa na faida na mapungufu yake zinazofikiriwa)

10. Je nini kifanyike ili kuweza kutoa elimu ya lishe vizuri kwa wanawake na watoto? (**Dadisi:** Machaguzi ya njia za mawasiliano, mifano ya utoaji taarifa, nguvu na udhaifu wake).

Annex 6c. In-Depth Interview Guide for Significant Other [Partner/Parent/in-Law]-English

Kindly, tell us about your age, education level, and occupation [**record <u>gender</u> as observed**].

1. What are the common foods consumed in your family/community? (Probe: how does it vary by season?)
2. What kinds of foods are usually consumed by women in particular? (Probe: for the reasons for consumption of specific types of foods by women: religious beliefs, ethnicity related, traditional beliefs, norms, availability, income/food prices, and others)
3. When they have the choice, what do women prefer to eat? What are the reasons for their preference?
4. What kinds of foods are usually consumed by adolescent girls (15–25 years of age)? (Probe for the reasons for consumption of specific types of foods by adolescents: food choices, religious beliefs, ethnicity related, traditional beliefs, norms and others)

Probe: When they have the choice, what do adolescent girls prefer to eat? What are the reasons for their preferences?

5. In your experience at your family how do women usually change their diets during pregnancy? How appropriate are these changes? Which ones should be perpetuated and why? Which ones should be changed and why?

   Probe: What foods are pregnant mothers supposed to eat? (Probe for the reasons. What are specific beliefs and conceptions about permitted and encouraged food items in this community?)

   Probe: What foods should pregnant women not eat? (**Probe** for the reasons. What are specific beliefs and conceptions about restricted food items in this community?)

   Probe: What foods should women eat after pregnancy? (**Probe** for the reasons. What are specific beliefs and conceptions about permitted and encouraged food items in this community?)

   Probe: What foods should women not eat after pregnancy? (**Probe** for the reasons. What are specific beliefs and conceptions about restricted food items in this community?)

6. What foods should women eat when breastfeeding? (Probe for the reasons. What are specific beliefs and conceptions about permitted and encouraged food items in this community?)

   Probe: What foods should women not eat when breastfeeding? (**Probe** for the reasons. What are specific beliefs and conceptions about restricted food items in this community?)

7. In your opinion, what foods do you feel are important/acceptable to feed children under two years of age? (Probe for the reasons for consumption of specific types of foods by children: How appropriate are these foods for young children? Which ones should be perpetuated and why? Which ones should be changed and why?)

   Probe: What foods should children under two years not eat? (**Probe** for the reasons. What are specific beliefs and conceptions about restricted food items in their family/community?)

   Probe: At the family level, who makes the final decisions about the choice of foods to be consumed? How are decisions about food choices/preferences made?

8. In your family or community, what efforts do you take to ensure that women of reproductive age and children access and consume appropriate food items?

   Probe: What efforts are taken by others in the community? (Are there existing interventions at community level?)

9. What kind of nutrition counselling or education, if any, is available here? (Probe: Who gives them nutrition education [community health workers, health care providers—nurse or doctor]. What are they told during nutrition counselling and education?)

10. Where do you and your family receive information on appropriate food items to be consumed by women of reproductive age and children? (Probe for issues being communicated and perceived strengths and weaknesses, areas for improvement).

Annex 6d. Mwongozo wa mahojiano ya kina kwa watu muhimu [Mwenzi/Mzazi/Mkwe]-Kiswahili

Tunaomba utueleze kuhusu:

Umri wako, kiwango cha elimu, kazi yako [Andika jinsia kama inavyoonekana]. Wakati wa mahojiano, tumia jinsia yake kama baba au mama

1. Je ni vyakula vya aina gani mmezizioea kula katika familia/jamii yako? (**Dadisi:** Je ni kwa namna gani zinatofautiana kulingani na majira ya mwaka?

2. Je ni vyakula vya aina gani wanawake hupendelea kula? (**Dadisi:** Kuhusu sababu zinazopelekea wanawake kupendelea ivyo vyakula; Imani za kidini, mambo ya mila na desturi, upatikanaji, kipato/bei za vyakula, na mengineyo)

   Dadisi: Wakati wakiwa na machaguo, ni nini hasa hupendelea kula? Ni zipi hasa sababu zinazowapelekea kuwa na machaguzi hayo?

3. Je ni vyakula vya aina gani wasichana waliobalehe (miaka 15–25) hupendelea kula? (**Dadisi:** Kuhusu sababu zinazopelekea wasichana balehe kupendelea kula vyakula ivyo?; Imani za kidini, mambo ya mila na desturi, upatikanaji, kipato/bei za vyakula, na mengineyo)

   Dadisi: Wakati wasichana waliobalehe wakiwa na machaguo, ni nini hasa hupendelea kula? Ni zipi hasa sababu zinazowapelekea kuwa na machaguzi hayo?

4. Kwa uzoefu wako, ni kwa namna gani wanawake hubadilisha milo yao kipindi wakiwa wajawazito? Je ni kwa namna gani mabadiliko hayo yapo sahihi? Ni sababu ipi moja inayotakiwa kuendelezwa na kwa sababu gani? Ni ipi inayotakiwa ibadilishwe na kwasababu zipi?

   Dadisi: Je ni vyakula gani ambavyo wanawake wajawazito wanapaswa kula? (**Dadisi:** Sababu ni zipi. Je ni zipi Imani na fikira kuhusu vyakula vilivyoruhusiwa na vile vinavyoshauriwa kwenye jamii?

   Dadisi: Je ni vyakula vipi ambavyo wanawake wajawazito hawaruhusiwi kula? (**Dadisi:** Je ni zipi Imani na fikira kuhusu vyakula vilivyoruhusiwa na vile vinavyoshauriwa kwenye jamii?)

   Dadisi: Je ni vyakula gani ambavyo wanawake wanakula baada ya ujauzito? (**Dadisi:** Sababu ni zipi. Je ni zipi Imani na fikira kuhusu vyakula vilivyoruhusiwa na vile vinavyoshauriwa kwenye jamii?)

   Dadisi: e ni vyakula vya aina gani ambavyo wanawake wajawazito hawaruhusiwi kula baada ya ujauzito? (**Dadisi**: Sababu ni zipi. Je ni zipi Imani na fikira kuhusu vyakula vilivyoruhusiwa na vile vinavyoshauriwa kwenye jamii?)

5. Je ni vyakula vya aina gani wanawake wanashauriwa kula kipindi wananyonyesha? (**Dadisi:** Sababu ni zipi. Je ni zipi Imani na fikira kuhusu vyakula vilivyoruhusiwa na vile vinavyoshauriwa kwenye jamii?

   Dadisi: Je ni vyakula vya aina gani ambavyo wanawake hawatakiwi kula kipindi wananyonyesha? (**Dadisi:** Sababu ni zipi. Je ni zipi Imani na fikira kuhusu vyakula vilivyoruhusiwa na vile vinavyoshauriwa kwenye jamii?)

6. Kwa uzoefu wako, je ni vyakula vya aina gani vinaumuhimu kwa watoto chini ya miaka 2? (**Dadisi**: Sababu maalumu zinazowapelekea watoto chini ya miaka 2 kula aina Fulani ya vyakula: Imani za kidini, mambo ya mila na desturi, upatikanaji, kipato/bei za vyakula, na mengineyo) Je ni kwa namna gani mabadiliko hayo yapo sahihi? Ni sababu ipi moja inayotakiwa kuendelezwa na kwa sababu gani? Ni ipi inayotakiwa ibadilishwe na kwasababu zipi?)

   Dadisi: Je ni vyakula gani ambavyo watoto chini ya miaka 2 hawali? (**Dadisi**: Je sababu maalumu ya kiimani na kifikira kuhusu vyakula ivyo vilivyokatazwa katika jamii hii?

   Dadisi: Katika ngazi ya jamii, ni nani anaetoa maamuzi ya mwisho kuhusu aina ya chakula kitakachiliwa? **Dadisi:** Je ni kwa namna gani maamuzi ya uchaguzi na upendeleo wa chakula?

7. Kwa uelewa wako, ni aina gani ya vyakula unahisi vinaumuhimu/kukubaliwa kuwalisha watoto chini ya miaka miwili? (**Dadisi:** Sababu ya kutumia aina maalumu ya vyakula kwa watoto; Je ni kwa namna gani vyakula hivyo vipo sahihi kutumiwa na watoto? Je ni aina ipi iendelee kushauriwana kwa sababu gani? Ni aina ipi ibadilishwe na kwa nini?

Dadisi: Je ni vyakula gani ambavyo watoto chini ya miaka 2 hawali? (**Dadisi:** Je sababu maalumu ya kiimani na kifikira kuhusu vyakula ivyo vilivyokatazwa katika jamii hii?)

8. Katika familia au jamii yako, unatumia mikakati ipi ili kuhakikisha wanawake na watoto wanapata na kula vyakula stahiki?

   Dadisi: Je mikakati ipi inatumiwa na wengine kwenye jamii? (**Dadisi**: Afua zilizopo kwenye ngazi ya jamii na taifa.)

9. Je ni aina gani ya ushauri au elimu ya lishe, kama ipo, inayopatikana hapa? (**Dadisi:** Ni nani anawapa wao elimu ya lishe [Wahudumu wa afya ngazi ya jamii, watoa huduma za afya kama manesi au madaktari]. Je ni kipi wanachosema wakati wa kutoa ushauri au elimu ya lishe.)

   Dadisi: Ni zipi vyanzo vya taarifa juu ya vyakula sahihi vinavyotakiwa kuliwa na wanawake walio katika umri wa kuzaa na watoto? (**Dadisi:** Taarifa zote zinazosemwa na faida na mapungufu yake zinazofikiriwa).

10. Je nini kifanyike ili kuweza kutoa elimu ya lishe vizuri kwa wanawake na watoto? (**Dadisi:** Machaguzi ya njia za mawasiliano, mifano ya utoaji taarifa, nguvu na udhaifu wake).

Annex 7. Focus Group Discussions Guides

Annex 7a. Focus Discussion Guide for Pregnant Women—English

Instructions

The participants should mention their numbers every time they respond to questions or provide inputs in the session.

Questions

1. What are the common foods consumed in this community (Probe: How does it vary by season?)
2. What kinds of foods are usually consumed by women like you specifically? (Probe for the reasons for consumption of specific types of foods by women: religious beliefs, ethnicity, traditional beliefs, norms, availability, income/food prices, and others)
3. What foods should women like you not eat? (Probe for the reasons: What are specific beliefs and conceptions about permitted and encouraged food items in this community?)
4. What do women usually eat (prefer) before, during, and after child birth? (Probe for the reasons for consumption of specific types of foods by women: food choices, religious beliefs, ethnicity, traditional beliefs, norms, availability, income/food prices, and others) (Probe: food choices, restriction of some food items, role of family members, significant others, peers and influential people on food choices).

   Probe: What foods are most important for them to consume at these times? (Probe for the reasons)

   Probe: What foods should women not consume at these times? (Probe for the reasons)
5. Whose role is it to ensure good nutrition for women? (Probe: What is their role? What should they do to ensure women have good nutrition? What do they usually do?)
6. In this community what efforts are being taken to ensure that women of reproductive age access and consume appropriate food items: (Probe for existing interventions at local and national level.)
7. What kind of nutrition counselling and education is available, if any? (Probe: Who gives them nutrition education [community health workers, health care providers—nurse or doctor]? What are they told during nutrition counselling and education?)
8. What are the existing sources of information on appropriate food items to be consumed by women of reproductive age? Who do you prefer to go to for advice? (Probe for issues being communicated and perceived strengths and weaknesses).
9. What can be done to provide nutrition education for women appropriately? (Probe for communication channels choices, models of information delivery, their strengths and weaknesses).

Annex 7b. Mwongozo wa majadiliano na wanawake wajawazito—Kiswahili

Maelekezo

Washirki wanapaswa kutaja namba ulizowapatioa kila mara wanapojibu maswali au kutoa mchango kwenye mjadala.

Maswali

1. Ni vyakula gani huliwa mara nyingi kwenye hii jamii (**Dadisi:** aina za vyakula vinavyoruhusiwa kula nna vyakula visivyoruhusiwa kula. Ni imani gani zinahusishwa na vyakula vilivyokatazwa kula na vile vinavyoruhusiwa kula kwenye hii jamii? Kuna mitazamo gani kuhusu vyakula vilivyokatazwa na vile vinavyoruhusiwa kula kwenye hii jamii?).
2. Ni aina zipi za vyakula mara nyingi huliwa na wanawake na wasichana katika jamii hii? (**Dadisi:** sababu za wanawake, wasichana na watoto kula aina hizo za vyakula; sababu za kiimani, kikabila, imani za kimila, desturi za jamii husika, upatikanaji wa vyakula hivyo, sababu za kipato au bei za vyakula husika na nyinginezo).
3. Ni aina gani za vyakula zinakatazwa kuliwa na wanawake, wasichana na watoto? (**Dadisi:** miiko [*makatazo*] mbalimbali kuhusu vyakula kwa wanawake, wasichana na watoto na sababu za miiko hiyo.
4. Wanawake hupendelea kula vyakula gani mara nyingi kabla ya ujauzito, wakati wa ujauzito na baada ya kujifungua? (**Dadisi:** uchaguzi wa vyakula, makatazo ya aina fulani za vyakula; Nafasi ya wanafamilia kwenye kukataza ukal aina Fulani ya vyakula, nafasi ya marafiki, rika, na watu wenye ushawishi mkubwa kwenye jamii). Wasichana wanapendelea kula vyakula gani? Ni nini kinasababisha wao kupendelea vyakula fulani (ladha, lishe, muonekano n.k?).
5. Je, ni vyakula gani wanawake wajawazito wanapaswa kula? (**Dadisi:** sababu za wao kupaswa kula vyakula hivyo. Ni vyakula gani hawaruhusiwi kula? Kwa nini? Ni vyakula gani haviruhusiwi kuwalisha watoto wadogo? Kwa nini?)
6. Kuna mila zipi zinazoathiri tabia za ulaji wa vyakula kwa wanawake wajawazito kwenye jamii yako? (**Dadisi:** je ni kwa kiasi gani zinafaa? Ni mila zipi zinatakiwa ziendelezwe? Kwa nini? Ni mila zipi zinapaswa kubadilishwa? Kwa ninin?).
7. Je, ni mila zipi zinaathiri tabia za ulishaji wa watoto wadogo? (**Dadisi:** je, ni kwa kiasi gani zinafaa? Ni mila zipi zinapaswa kuendelezwa? Kwa nini? Ni mila zipi zinapaswa kubadilishwa? Kwa nini?)
8. Annex 6a. Je, ni juhudi zipi zinazofanyika kwenye jamii hii ili kuhakikisha kuwa wanawake walio katika umri wa uzazi na watoto wadogo wanapata na kutumia vyakula sahihi? (**Dadisi:** afua zilizopo katika ngazi ya jamii hadi taifa. Je, ushauri na elimu ya lishe inapatikana? Nani hutoa ushauri na edlimu ya lishe [wahudumu wa afya ngazi ya jamii, watoa huduma za afya—manesi, madaktari, nk.]?) Je, huwa mnaambiwa nini kwenye ushauri na elimu ya lishe?)
9. Je, kuna vyanzo gani vya taarifa kuhusu makundi sahih ya vyakula vinavyopaswa kuliwa na wanawake walio katika umri wa uzazi na watoto wadogo? (**Dadisi**: masuala yanawasilishwa; sifa zake na mapungufu). Nini kifanyike ili kutoa elimu ya lishe kwa ajili ya wanawake na watoto kwa usahihi? (**Dadisi:** njia za mawasiliano mnazopendelea, namna ya kuwasilisha ujumbe [nyumbani, vituo vya afya, mikutano ya hadhara n.k], faida na mapungufu yake).

Annex 7c. Focus Discussion Guide for Caregivers of Children Aged 6–23 Months—English

Instructions

The participants should mention their numbers every time they respond to questions or provide inputs in the session.

Questions

1. What are the common foods consumed in this community (Probe: How does it vary by season?)

2. What foods are usually fed to children under two? (Probe for the reasons for consumption of specific types of foods by children: food choices, religious beliefs, ethnicity, traditional beliefs, norms, availability, income/food prices, and others)
3. What foods do children under two like the most? (Probe for the reasons).
4. What foods do children under two dislike? (Probe for the reasons).
5. What foods are important for children under two to eat? (Probe for the reasons).
6. What foods should not be fed to children under two? (Probe for the reasons)
7. Whose role is it to ensure good nutrition for children under two? (Probe: What is their role? What should they do to ensure that children under two have good nutrition? What do they usually do?)
8. In this community what efforts are being taken to ensure that children access and consume appropriate food items? (Probe for existing interventions at local and national level.)
9. What kind of nutrition counselling and education is available, if any? (Probe: who gives them nutrition education [community health workers, health care providers—nurse or doctor]? What are they told during nutrition counselling and education?)
10. What are the existing sources of information on appropriate food items to be consumed by children? Who do you prefer to go to for advice? (Probe: issues being communicated and perceived strengths and weaknesses).
11. What can be done to provide nutrition education for children appropriately? (Probe: communication channels choices, models of information delivery, their strengths and weaknesses).

Annex 7d. Muongozo wa majadiliano kwa walezi/wazazi wa watoto wenye miezi 6–23—Kiswahili

Maelekezo

Washirki wanapaswa kutaja namba ulizowapatioa kila mara wanapojibu maswali au kutoa mchango kwenye mjadala.

Maswali

1. Je ni vyakula gani vinavyotumiwa katika jamii hii? (Dadisi: je jinsi gani inatofautiana kimsimu?) Je ni chakula gani watotochini yamiaka miwili 2 huwa wanalishwa? (Dadisi: sababu ya matumizi ya aina Fulani ya chakula kwa wasichana; uchaguzi wa vyakula, Imani za kidini, ukabila, tamaduni, kanuni, upatikanaji wa vyakula, kipato/bei ya vyakula na nyinginezo)
2. Je ni chakula gani watoto chini ya miaka 2 wanapendelea kula? (Dadisi: je ni nini sababu za kupendelea)
3. Dadisi:
    a. Je ni chakula gani watoto chini ya miaka 2 hawapendi? (Dadisi: sababu)
    b. Je ni chakula gani muhimu kwa watoto chini ya miaka 2? (Dadisi: sababu)
    c. Je ni chakula gani hakitakiwi kulishwa watoto chini ya miaka 2 (Dadisi: sababu)
    d. Ni jukumu la nani kuhakikisha lishe bora kwa watoto chini ya miaka 2? (**Dadisi:** je ni lipi jukumu lao? Je ni nini wafanye kuhakikisha wasichana wanapatiwa lishe bora? je ni nini huwa wanafanya?)

4. Katika jamii ni jitihada gani zinazochukuliwa kuhakikisha watoto wanapata na kutumia aina sahihi ya vyakula. (Dadisi: Afua zilizopo katika ngazi ya mitaa na taifa)
5. Je ni ushauri gani na elimu ya lishe inayopatikana, kama ipo? (Dadisi: nani anawapatia elimu ya lishe [wafanyakazi wa afya jamii, watoa huduma za afyanesi au daktari]) Je ni nini walisema wakati wa ushauri na elimu ya lishe.)
6. Je, ni chanzo kipi cha habari kilichopo sahihi kuhusu aina ya vyakula vinavyotumiwa na watoto? unapendelea kwenda kwa nani kwa ushauri? (Dadisi: masuala yanayozungumzwa na kutambulisha nguvu na udhaifu)
7. Je, ni nini kifanyike kutoa elimu sahihi ya lishe kwa watoto? (Dadisi: uchaguzi wa njia za mawasiliano, mifano ya utoaji taarifa, nguvu na udhaifu wake.)

Annex 7e. Focus Discussion Guide for Adolescents Aged 15–19 Years—English

Instructions

Questions

1. What are the common foods consumed in this community (Probe: How does it vary by season?)
2. What kind of foods do adolescent girls usually eat? (Probe for the reasons for consumption of specific types of foods by adolescents: food choices, religious beliefs, ethnicity related, traditional beliefs, norms, availability, income/food prices, and others)
3. What do adolescent girls like you prefer to eat? What are the reasons for their preference?
4. What foods do adolescent girls like you dislike? (Probe for the reasons).
5. What foods should adolescent girls like you not eat? (Probe for the reasons)
6. Whose role is it to ensure good nutrition for adolescent girls? (Probe: What is their role? What should they do to ensure adolescent girls have good nutrition? What do they usually do?)
7. In this community what efforts are being taken to ensure that adolescent girls access and consume appropriate food items: (Probe for existing interventions at local and national level.)
8. What kind of nutrition counselling and education is available, if any? (Probe: Who gives them nutrition education [community health workers, health care providers—nurse or doctor]? What are they told during nutrition counselling and education?)
9. What are the existing sources of information on appropriate food items to be consumed by adolescent girls? Who do you prefer to go to for advice? (Probe: issues being communicated and perceived strengths and weaknesses).
10. What can be done to provide nutrition education for adolescent girls appropriately? (Probe: communication channels choices, models of information delivery, their strengths and weaknesses).

Annex 7f. Muongozo wa mahojiano kwa wasichana balehe wenye miaka 15–19—Kiswahili

Maelekezo

Washirki wanapaswa kutaja namba ulizowapatioa kila mara wanapojibu maswali au kutoa mchango kwenye mjadala.

Maswali

1. Je, ni vyakula gani vinavyotumiwa katika jamii hii? (Dadisi: je jinsi gani inatofautiana kimsimu?)

2. Je, ni chakula gani wasichana huwa wanakula? (Dadisi: sababu ya matumizi ya aina Fulani yachakula kwa wasichana; uchaguzi wa vyakula, Imani za kidini, ukabila, tamaduni, kanuni, upatikanaji wa vyakula, kipato/bei ya vyakula na nyinginezo)
3. Je ni nini wasichana wanapenda ambacho unapendelea kula? (Dadisi: je ni nini sababu za kupendelea)
4. Je ni chakula gani wasichana wanapenda wewe haukipendi? (Dadisi: sababu)
5. Ni jukumu la nani kuhakikisha lishe bora kwa wasichana? (Dadisi: je ni lipi jukumu lao? Je ni nini wafanye kuhakikisha wasichana wanapatiwa lishe bora? Je ni nini huwa wanafanya?)
6. Katika jamii ni jitihada gani zinazochukuliwa kuhakikisha wasichana wanapata na kutumia aina sahihi ya vyakula. (Dadisi: Afua zilizopo katika ngazi ya mitaa na taifa)
7. Je ni ushauri gani na elimu ya lishe inayopatikana, kama ipo? (Dadisi: nani anawapatia elimu ya lishe wafanyakazi wa afya jamii, watoa huduma za afya [nesi au daktari]) Je ni nini walisema wakati wa ushauri na elimu ya lishe.
8. Je, ni chanzo kipi cha habari kilichopo sahihi kuhusu aina ya vyakula vinavyotumiwa na wasichana? Unapendelea kwenda kwa nani kwa ushauri? (Dadisi: masuala yanayozungumzwa na kutambulisha nguvu na udhaifu)
9. Je, ni nini kifanyike katika kutoa elimu lishe sahihi kwa wasichana? (Dadisi: uchaguzi wa njia za mawasiliano, mifano ya utoaji taarifa, nguvu na udhaifu wake.

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