

**Perceptions of the changing food environment
and the right to adequate food for adolescent
students in Kampala, Uganda**

OSLOMET

Faculty of Health Sciences

Department of Nursing and Health Promotion

Public Health Nutrition

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OsloMet – Oslo Metropolitan University

By Marion Brodin

Preface

This master thesis derived from my interest in global nutrition and human rights. Liv Elin Torheim, my supervisor and I collaborated to construct a study design in accordance with my interests, in the completion of my master's degree in public health nutrition at OsloMet – Oslo Metropolitan University. I cherish the experiences and valuable knowledge I have gained through the conduction of this master thesis.

I appreciate all persons and institutions contributing to the finalisation of this thesis, both in Norway and in Uganda.

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I am humbled by every participant, including each school, for your commitment and for helping me conduct my research. I appreciate every participating student for talking so freely and sharing your insights full-heartedly. Thank you to each participating duty-bearer, for taking the time and providing such nuanced information.

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Abstract

Background for this study

Adequate nutrition is one of the most critical determinants for adolescents' development and health. Food environments is an essential factor with substantial impact on dietary behaviour. How Kampalas's adolescent students and food- and health authorities perceive these changes are poorly understood.

Objectives

This study aimed to explore adolescents' (rights holders) perceptions of food and dietary changes in light of the changing food environments, using a human rights perspective. Furthermore, the study aimed to explore the authorities' (duty-bearers) perceptions of the changing dietary behaviour and their understanding of their responsibilities for improving adolescents' food environment.

Method

A human rights-based approach was applied when planning and conducting the study, and Qualitative Description was the chosen research approach. The data material is based on 44 adolescents from four urban and peri-urban schools with different socio-economic status, interviewed through eight focus group discussions. In addition, were five qualitative interviews conducted with food- and health authorities in Kampala, Uganda. The data material was collected in 2018.

Results

The findings of this study indicate that changes in the food environments and food marketing, affect adolescents' dietary behaviour. Western food was mainly perceived as prestigious. Reasons for purchasing fast food were availability, convenience, social pressure and acceptance. The duty-bearers worried about the noticeable upsurge in non-communicable diseases. The adolescents had an understanding of their human rights but were unfamiliar with the right to adequate food. Some duty-bearers knew their human right responsibility; others did not position themselves as duty-bearers.

Conclusion

These findings indicate that changing food environments affect adolescents' dietary behaviour. The changing food environments are likely to progress in Uganda, causing an increased upsurge in non-communicable diseases. Therefore, in efforts to constrain the development, there is a need for further research on adolescents' food environments to ensure the health of adolescents.

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Abbreviations and acronyms

BMI	Body Mass Index
CDMGLSD	A Representative from the Community Development in the Ministry of Gender, Labour and Social Development
CRC	Convention on the Rights of the Child
FGD	Focus Group Discussion
GC No. 12	General Comment number 12
GER	Gross Enrolment Rates
CESCR	International Covenant on Economic, Social and Cultural Rights
HRBA	Human Rights-Based Approach
KCCA	The Kampala Capital City Authority
KFC	Kentucky Fried Chicken
MAKKS REC	Makerere University School of Public Health Higher Degrees Research and Ethics Committee
NCD	Non-Communicable Disease
NDMH	A Representative from the Nutrition Division at the Ministry of Health
NSD	Norwegian Centre for Research data AS
OsloMet	OsloMet – Oslo Metropolitan University
PFN	A Representative from the Parliamentary Forum of Nutrition
PHKCCA	A Representative from the Public Health Department at the Kampala City Council Authority
PI	Principal Investigator
QASMM	A Representative from the Quality Assurance and Standardisation at the Ministry of Marketing
QD	Qualitative Description
SDG	Sustainable Development Goals
SSB	Sugar-Sweetened Beverages
UN	United Nations
UNBS	Uganda National Bureau of Standards
UNCST	Uganda National Council for Science and Technology
WHO	World Health Organization

1 Introduction

A critical factor for child¹ and adolescent² development is appropriate nutrition (Corkins et al., 2016). Nutrition is also a crucial factor for preventing diseases, particularly some non-communicable diseases (NCDs) such as diabetes type 2 and cardiovascular diseases. Dietary habits established early in life, may continue into adult life. It is essential to prevent risk factors for NCDs and address dietary habits early, thus provide food environments that promote optimal nutrition children and adolescents (Corkins et al., 2016).

A quarter of the world's population was between 10 and 24 years old in 2014, and most of them (89%) lived in developing countries (UNFPA, 2014). Many of these adolescents live in environments that do not encourage optimal nutrition (UNICEF, 2018). The obesity prevalence of adolescents is high across all regions of the world, and rapidly increasing in the recent years (Popkin, Adair, & Ng, 2012; Popkin & Gordon-Larsen, 2004; UNFPA, 2014). Adolescent obesity tends to persist into adulthood, which is likely to cause associated comorbidities. Investment in development, health and nutrition of adolescents is additionally according to the World Bank, beneficial to increase economic growth (World Bank, 2002). The United Nations (UN) has set 17 Sustainable Development Goals (SDG) to be achieved within 2030, where twelve requires adequate nutrition to be achieved (International Food Policy Research Institute, 2016; UN, n.d).

The human right to adequate food means to have access to adequate food at all times. Additionally, food should be available, accessible, sustainable, culturally acceptable and must be nutritionally adequate (CESCR, 1999). The right to adequate food is recognised in the International Covenant on Economic, Social and Cultural Rights (CESCR), the Convention on the Rights of the Child (CRC), as well as the Constitution of Uganda. Further, the States that has ratified the right has defined obligations to fulfil in order to implement the right to adequate food at national a level or can otherwise be held accountable.

Uganda's population is characterized by malnutrition, with both underweight and overweight and obesity. Among adolescents, the overall underweight and overweigh prevalence were 6 per cents each (Ministry of Health et al., 2016) (UNICEF, 2019b). Adolescents are the largest population-group in Kampala and are most vulnerable to changing food environments and its consecutive

¹ Child: a person younger than 18 years (UN, 1989).

² Adolescent: a person aged 10-19 years (WHO 2013).

consequences. This thesis studies several aspects of nutrition and human rights, especially the right to adequate food of adolescents in Kampala in the context of changing food environments.

2 Aims and Objectives

Aims of this study

The aim of this study was to explore adolescents' (rights holders), and food- and health authorities' (duty-bearers) perceptions of dietary changes and marketing practices in Kampala, Uganda, in light of the changing food environments, using a human rights perspective.

2.1 Specific objectives

Concerning adolescents:

1. To explore the adolescents' perceptions concerning food and the relation to health
2. To explore how adolescents perceive Traditional and Western diets in relation to health.
3. To investigate their perceptions of the changing food environment, including access, availability and influences on dietary behaviour
4. To explore the adolescents' understanding of human rights.

Concerning food- and health authorities:

5. To investigate how duty-bearers perceive the changing food environment in Uganda.
6. To explore the duty-bearers understanding of human rights and whether they relate increased availability- and marketing of unhealthy food to human rights.
7. To explore how duty-bearers plan to protect and improve adolescents' food environments.

3 Theory

One in three people globally is affected by malnutrition which is considered to be one of the greatest public health challenges of our time (Turner et al., 2018). Over the past decades, a drastic shift has occurred in the dietary habits and lifestyle of the global population, which also has changed the body composition and increased the prevalence in NCDs (Oosterveer & Sonnenfeld, 2012). Several underlying aspects are causing these changes such as globalization, economic and technological development, food system changes and food environment changes (Turner et al., 2018; UNICEF, 2018, 2019a). In order to improve global health outcomes, one should address the underlying factors.

3.1 Global dietary changes

3.1.1 *Food system changes*

Enough food is produced to feed the entire global population, but the food is distributed poorly, as one billion people are hungry, and two billion people are overweight (Oosterveer & Sonnenfeld, 2012). The availability of food has increased through improved transport and storage, making seasonal products available all year round. However, the expansion of ultra-processed³ and fast food, combined with the impact of marketing, multinational and transnational corporations are making it harder for children to eat well (UNICEF, 2019b). The availability and access to food are limited in some places, namely food deserts, while other places have an abundance of high-calorie food called food swamps (Osorio, Corradini, & Williams, 2013).

Food supplies have been influenced by the globalised distribution of technology, transport, marketing, mass media and capital flow (Oosterveer & Sonnenfeld, 2012). The changes are highly related to urban areas, however also increasingly in rural areas. The food supply changes are linked to food security. Fresh markets in developing countries used to be the primary source of food but are being replaced with supermarkets. This shift is associated with increased access to processed food high in fat, salt and sugar (Oosterveer & Sonnenfeld, 2012). Nevertheless, supermarkets have established standards for food safety, and there is a free flow of trade linked with the World Trade Organisation (Popkin et al., 2012).

3.1.2 *Changing food environments*

Today's society facilitates diets high in energy, through making energy-dense food readily available and accessible (Oosterveer & Sonnenfeld, 2012). Simultaneously, the opportunities to be physically active decreases. The consequence of this behaviour is increased prevalence in overweight and

³ Ultra-processed food: industrial formulations containing substances extracted from whole foods (UNICEF, 2019b)

obesity, which are associated with increased risk of developing NCDs such as diabetes, cardiovascular disease and cancer (Oosterveer & Sonnenfeld, 2012). The *obesogenic environment* is defined as “the sum of influences that the surroundings, opportunities, or conditions of life have on promoting obesity in individuals or populations” (Swinburn, Egger, & Raza, 1999, p. 569).

The global change in diets and activity patterns are well known as the world’s population is becoming more and more overweight⁴ and obese⁵ (Popkin & Gordon-Larsen, 2004). Overweight and obesity was once considered as a high-income country problem, but are now increasing in the poorest countries of sub-Saharan Africa and South Asia, and particularly in urban settings (WHO, 2020b).

In developed countries such as in the USA and Europe, the nutritional changes took place at a slower pace than what is happening in developing countries (Popkin, 2006). The current changes in developing countries are occurring in an earlier stage of economic and social development, making these countries unprepared to tackle the complications that follow this shift (Popkin, 2006). Few countries are committed to preventing the serious challenges being faced (Popkin et al., 2012).

Nutrition Transition refers to this shift, from the consumption of a *Traditional diet* containing legumes, vegetables and coarse grains and having an active lifestyle, to a *Western diet*, defined by high intakes of processed food, refined carbohydrates, added sugars, fats and animal-source food and a sedentary lifestyle (Popkin & Gordon-Larsen, 2004). Rising income and reduction in famine enable this transition and creates the local disease pattern previously rare in lower- and middle-income countries.

Isolated interventions have limited effects on dietary behaviour. Instead, there is a need for a food system approach - from production, processing, storage, transportation, marketing, retailing and consumption (FAO, 2016). The link between the food system and peoples’ dietary behaviour are food environments, which affects dietary choices (FAO, 2016). The food environment can be divided in two, the external food environments which are influenced by policies, marketing and labelling, and internal food environments are factors that enable or limits dietary choices (UNICEF, 2019b). A healthy food environment can create conditions that enable and encourage people to access and choose healthy diets (FAO, 2016).

To address the personal- and external domains of food environments within food systems, Turners et al. developed a conceptual framework (Figure 1) (Turner et al., 2018). The framework distinguishes between availability and accessibility and refers to whether a vendor or product is

⁴ Overweight: a person with a Body Mass Index (BMI) between 25-30 kg/m² (WHO, 2020a).

⁵ Obese: a person with a BMI equal to or more than 30 kg/m² (WHO, 2020a).

present within a given context while accessibility is relative to individuals and is dynamic because of distance, time, place and transport. “Availability always precedes accessibility (i.e. a food cannot be accessible if it is not available)” (Turner et al., 2018, p. 96). Food prices define individuals’ affordability and thus, food accessibility. Vendor and product properties refer to food vendors, opening hours and services provided, as well as food quality, safety, processing level, shelf-life and packaging. These aspects interact with time allocation and preparation to determine individual convenience. Marketing and regulation refer to promotional information, advertising, sponsorship, labelling, and policy regulations relating to food sales, which affect individuals’ preferences, acceptability, tastes, desires, attitudes, culture, knowledge and skills. The interaction between the determinants shapes the individuals’ food acquisition and consumption (Turner et al., 2018).

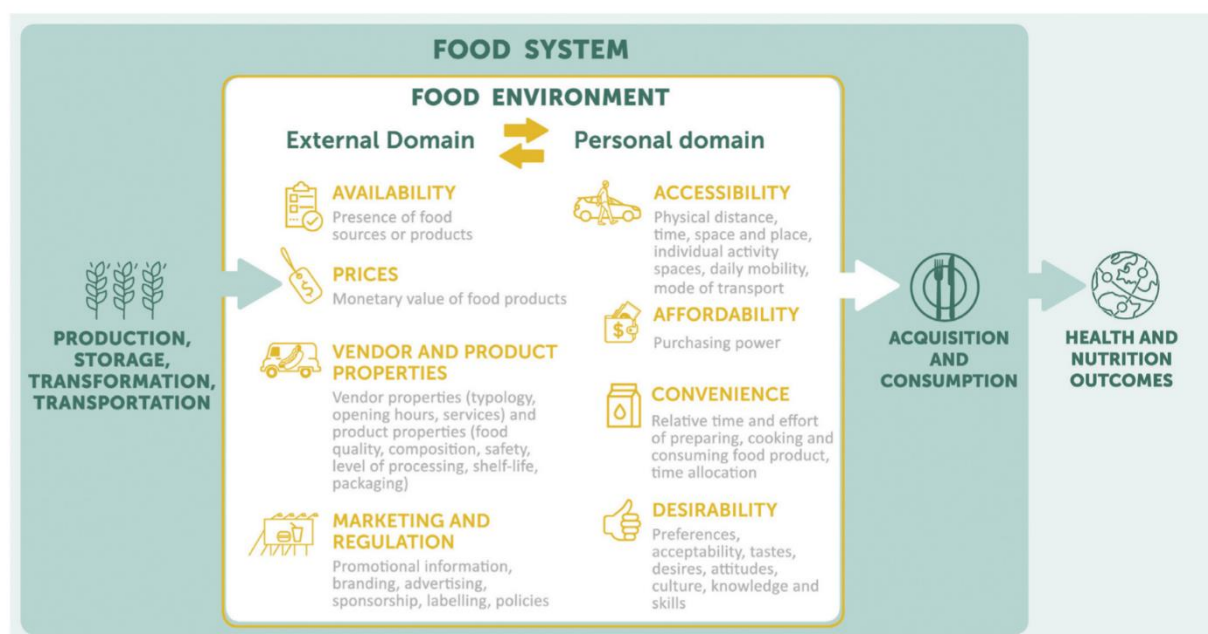


Figure 1. A conceptual framework of the food environment (Turner et al., 2018)

3.2 Human rights

Human rights are universal and apply to all human beings and are interrelated, interdependent and indivisible (General Assembly, 1948). They establish legal entitlements for individuals or groups as rights-holders, and corresponding obligations to respect protect and fulfil those rights for governments and institutions as state actors (UN, 1966). There is a dual focus on the outcome and process in creating enabling environments where rights-holders can take care of themselves and not burden the government (Jonsson, 2003). The right to food is recognised in the Universal Declaration of Human Rights and is an international human rights law, enshrined in the ICESCR (UN, 1966). The right to adequate food is realised when everyone has “physical and economic access at all times to

adequate food or means for its procurement” GC No. 12 (CESCR, 1999, p. 3). Food should be available for sale or cultivation, accessible without compromise, sustainable, culturally acceptable and must be nutritionally adequate to satisfy dietary needs and be safe for human consumption. Children have the additional right CRC, which includes the best interest of the child, right of the child to the enjoyment of the highest attainable standard of health and the right to be heard (UN, 1989).

In order for duty-bearers to meet their responsibility and obligations, they must have the capacity to do so, including motivation, the authority and access to the necessary resources (Jonsson, 2003). There are several duty-bearers at different levels responsible for the right to adequate food (CESCR, 1999). Parents or caregivers are the primary duty-bearer for their children, though they are first and foremost responsible for their basic needs, such as feeding and housing (Jonsson, 2003). Duty-bearers from the State, community and schools have obligations to create a healthy external food environment, such as the providing availability and access to nutritious foods and nutrition information (CESCR, 1999).

Human right principles include participation, accountability, transparency, non-discrimination and equality, empowerment and legality, which should guide assessments, analysis, policymaking, programme development, implementation, monitoring and evaluation. A human rights-based approach (HRBA) offers a structure using human rights principles. It identifies the most vulnerable non-discriminately, seeks their participation and empowers them to claim their rights to facilitate the development of their full potential.

3.3 Adolescents

Aside from the very first year of life, adolescence is the most significant phase of growth and development (Canavan & Fawzi, 2019). Their rapid growth leads to a drastic increase in nutritional requirements that can even exceed adulthood requirements (Corkins et al., 2016). Children and adolescents must be provided with a nutritious, safe and diverse diet at all stages of growth to be equipped for their physical and cognitive development to achieve enhanced school performances and healthy life (UNICEF, 2019b). The food must be of good quality, consistently available, accessible and affordable. Besides, their family or caregivers need resources to provide for a healthy diet, support in financial stress, access to health services and healthy environments. Additionally, political commitment, economic priorities and social norms inflict on children’s diets. To better understand and address these challenges, UNICEF developed a conceptual framework (Figure 2) the which builds on UNICEF’s 1990 framework on the causes of child undernutrition. The framework provides

clarity about the enabling, underlying and immediate determinants of nutrition, and the outcomes from improved nutrition (UNICEF, 2019b).

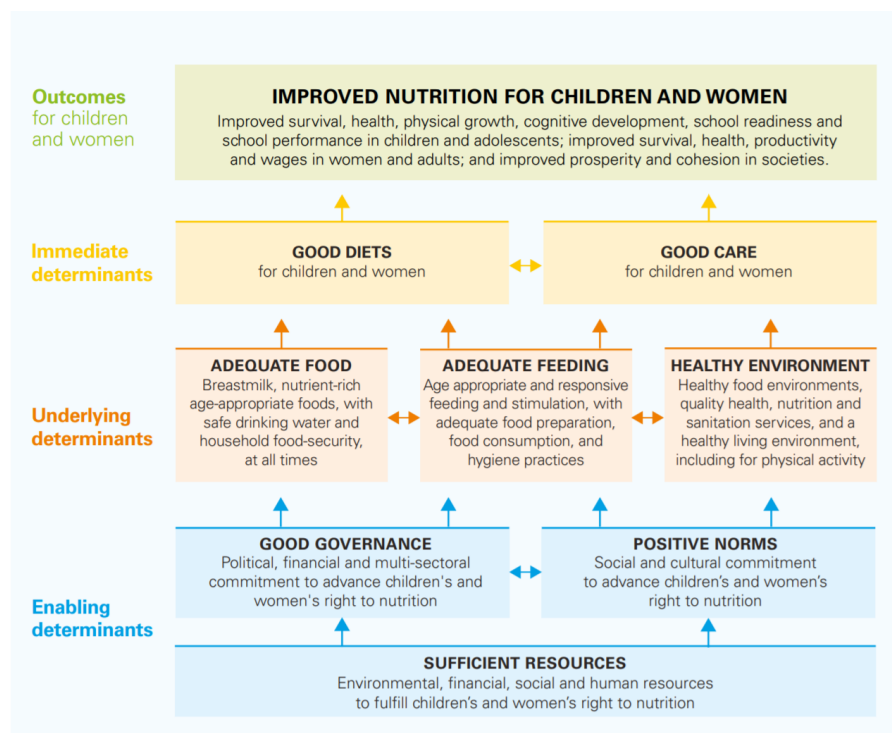


Figure 2. UNICEF's conceptual framework of the determinants of maternal and child nutrition (UNICEF, 2019b)

Adolescents' dietary choices might not be determined by the possible long-term health effects of food. Instead, external factors such as food marketing and cool fast food restaurants that provide a place to hang out, and internal factors such as peer pressure, body image and the social desire to fit in, may influence their dietary choices (UNICEF, 2019b). Adolescence is a time with reduced parental supervision, and often the time where poor dietary habits are established. Adolescents have a tendency to skip meals (especially breakfast) and consume snacks, fast food and sugar-sweetened beverages at the expense of nutritionally adequate foods. Adolescence is also usually the onset of eating disorders (Corkins et al., 2016; UNICEF, 2019b).

Childhood obesity is often a result of excessive intake of ultra-processed and energy-dense foods, and limited healthy foods (Corkins et al., 2016). One soda a day exceeds the World Health Organisation (WHO) recommendations for added sugar intake for children at less than 25 grams a day, as an average soda contains 35-grams (WHO, 2015). Limitation, or elimination of these energy-dense foods and drinks, improves nutritional status. Children should be encouraged to eat five portions of fruits and vegetables, or more daily (WHO, 2003). Physical activity is an essential part of health promotion, and it is recommended for children and youth to accumulate "at least 60 minutes

of moderate- to vigorous-intensity physical activity daily” (WHO, n.d). Sedentary activities such as television, computer use (non-school related) and video games should be kept to less than 2 hours per day (Corkins et al., 2016). Childhood obesity can lead to multiple conditions, such as dyslipidaemia and hypertension. Dietary habits established early in life may continue into adult life. Many adolescents live in homes, schools and environments that do not promote optimum nutrition (UNICEF, 2015).

3.3.1 *School environment*

Inadequate diets during childhood can have lifelong consequences on educational achievements, health and economic outcomes (WHO, 2016b). One-third to one-half of adolescents’ meals are consumed at school (Micha et al., 2018). Considering that most children obtain some schooling, the school premises create an excellent arena for health promotion for children of all socio-economic groups. Schools and food vendors should collaborate to reduce the availability of unhealthy food options or increase healthy food options and set restrictions on the marketing of unhealthy food in the school premises (Canavan & Fawzi, 2019). Additionally, providing nutritious meals at school may improve school retention and enrolment (Canavan & Fawzi, 2019).

3.3.2 *Marketing of food and beverages to children*

Children across high-, middle- and low-income countries are increasingly becoming subject to ubiquitous marketing (WHO, 2016b). The marketing campaigns stimulate a preference for unhealthy food and sugar-sweetened beverages, which influence dietary choices and conspires to increase the risk of overweight and obesity (WHO, 2016b). Advertisement for unhealthy food targeted to children often has blurred distinctions between advertisement and entertainment (Lapierre et al., 2017). Due to the children’s growing cognitive abilities, they may not be able to, nor motivated to evaluate advertisement or make well-informed consumer decisions. Not only do children influence family consumption, but they also spend billions of their own money on purchases and promise a lifetime of brand loyalty (Lapierre et al., 2017). Exposure to the marketing of unhealthy food can be seen in public spaces, near schools, TV commercials, or internet platforms by digital marketing considered the most effective (WHO, 2016b). One in three internet users globally is estimated to be a child (WHO, 2016b).

3.4 **Context**

Uganda is a landlocked republican country located in East-Africa, by the Victoria Lake (SNL, 2019). In 1962 Britain granted independence to Uganda after being a protectorate of the British Empire since 1894. The official languages are English and Swahili. However, not all Ugandans’ speak English nor

Swahili. Their first language differs as they have numerous native languages due to many population groups. Kampala is the capital city, which is a developed city in this low-income country. Uganda houses a population of over 45 million people (UN Population Fund, 2019). Almost half of the population is under 15 years old, and 34 per cent is between 10 and 24 years (UN Population Fund, 2019). Rural areas in Uganda are generally more impoverished than urban areas and holds the majority of the countries' adolescents (80%) (U. World Food Programme, 2019b).

Uganda's education system follows seven years of primary school-aged 6-12 years, then four years of lower secondary education (ordinary level) aged 13-16 years, completed by two years of upper secondary education (advanced level) aged 13-18 years (Ministry of Health et al., 2016). Even though Uganda has universalized primary education, the enrolment rates for higher secondary education is low, also in comparison with neighbouring countries (The World Bank, 2018). Forty-two per cents of eligible adolescents aged 13-18 are not in school, and females are the most affected (Ministry of Health et al., 2016). Inequality in access to education exists by region, location, wealth and gender. In Central regions, the enrolment rates are higher than in the North. For example in Kampala, the Gross Enrolment Rates per district (GER) for lower secondary education was over 50 per cent, while in rural Kaabong in Karamoja district, the GER was five per cents (The World Bank, 2018).

In some parts of the country, food insecurity⁶ still exists, mainly due to poverty, climate conditions and poor agricultural productivity. The northern and western regions of Uganda are affected by drought, thus affects the food production and subsequently, the nutritional status (Ministry of Health et al., 2016). The traditional Ugandan diet contains mostly starchy roots such as cooking bananas (*matoke*), potatoes and cassava, and cereals such as maize, millet and rice, in addition to pulses, nuts and green leafy vegetables (FAO, 2010). Food in Uganda means *emere* – a stiff porridge, which they combine with a relish (Whyte & Kyaddondo, 2006). The Traditional food *emere* can be made from maize flour, millet, rice, steamed *matoke*, boiled potatoes or cassava. *Emere* is dipped in the relish made of boiled leafy green vegetables, beans, groundnuts, cowpeas, or fish, chicken, fried eggs or meat, prepared with onions, tomatoes or vegetables (Whyte & Kyaddondo, 2006). *Posho* is a type of *emere*, a thick and firm porridge made out of white maize flour and water, usually served with beans in sauce. The intake of *posho* increases in a scarcity of money or limited access to *matoke*.

⁶ Food security: “when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO, 2001, p. 49).

3.4.1 *Nutritional status in Uganda*

Uganda's population is characterized by malnutrition, with both underweight and overweight and obesity. People most vulnerable to undernutrition and food insecurity are in the northern and eastern parts of the country. Stunting⁷ and wasting⁸ reach 40 and 20 per cents in some areas, respectively (World Food Programme, 2019a). Simultaneously, the population rate for overweight was 18 per cent, with significant differences between genders (WHO, 2016a). Over twice as many women were overweight than men, 26 per cent and 11 per cent respectively. The obesity rate shows the same trends within genders, at 6 per cent for women and 1 per cent among men (WHO, 2016a).

Among adolescents, the overall underweight and overweigh prevalence were similar at 6 per cents each (Ministry of Health et al., 2016). However, the prevalence of stunting among adolescents was 15 per cents and especially prevalent amongst those with a lower socio-economic status. Underweight was more prevalent among adolescent males than females, while overweight was most prevalent among females, and significantly higher among urban females. Kampala and the central regions had the highest prevalence of adolescent overweight (14%), while the northern region had the highest prevalence of underweight (12%) (Ministry of Health et al., 2016).

Uganda Vision 2040 is a development strategy that, among many aspects, aims at protecting human rights and includes a health strategy to improve the population's nutritional status (Republic of Uganda, n.d). The strategy also includes a school feeding policy. This strategy aims at increasing national economic productivity as a result of reduced child stunting, improved maternal health, enhanced micronutrient intake and improved nutritional care (Republic of Uganda, n.d).

The government and the communities have responsibilities to promote supportive food environment for adolescent students to enjoy their right to adequate food. This responsibility is shared with non-governmental organisations, the industry and institutions, such as schools.

3.5 **The conceptual framework and model**

For this thesis, the UNICEF conceptual framework (UNICEF, 2019) was moderated to fit the presented scope and with the use of neutral determinants. The changes made are predominantly within the underlying determinants (Figure 3). External food environments, internal and proximal factors and physical environment have replaced the underlying determinants in UNICEF's framework, to enable a holistic approach to the adolescents' drivers for dietary change. The specifics of the underlying determinants relevant to this thesis will be explained below. Finally, physical activity was

⁷ Stunting: low height-for-age (WHO, 2020a).

⁸ Wasting: low weight-for-height (WHO, 2020a).

added under the immediate determinants affecting nutritional and health outcomes. The finished framework places the thesis in a broader context.

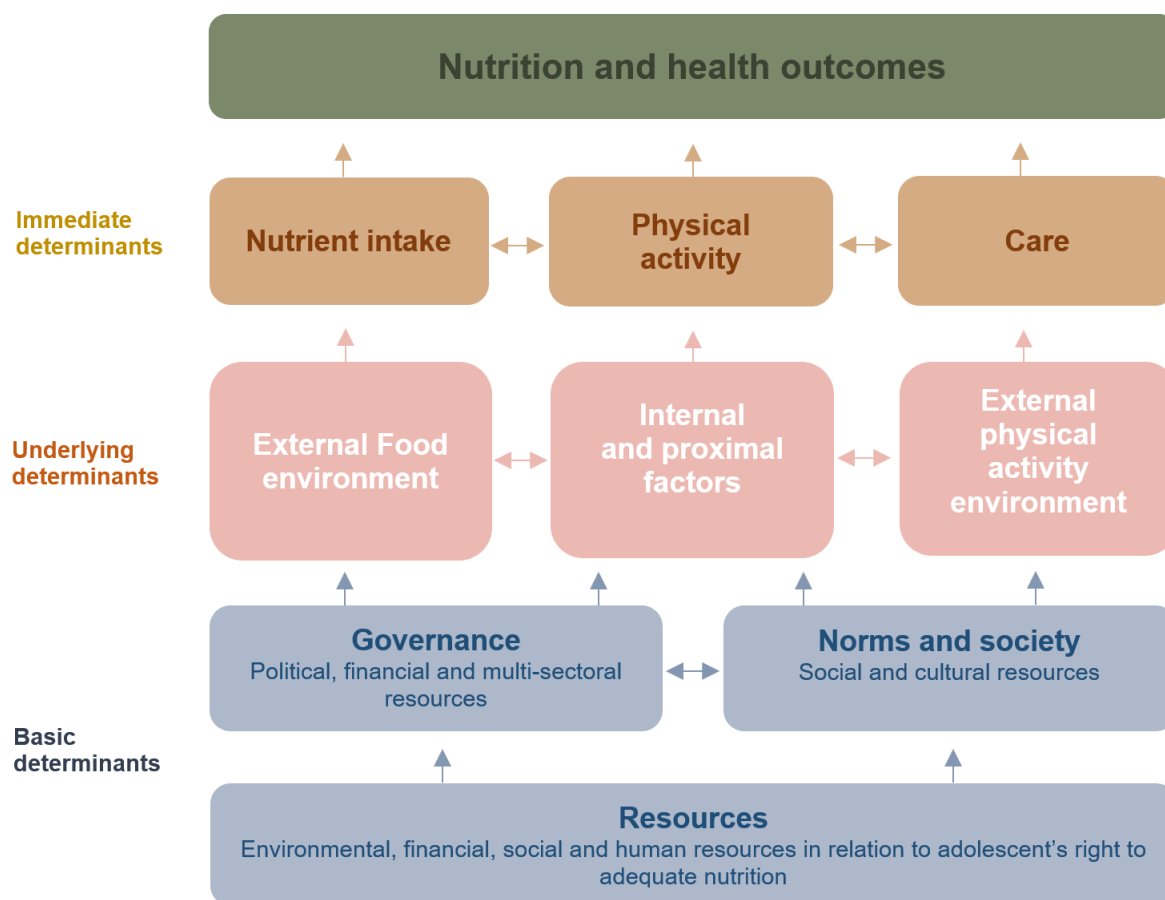


Figure 3. The conceptual framework for adolescents external and internal factors in the early stage of the changing food environment (adapted from UNICEF 2019).

Food environments have been described with numerous definitions, from simple descriptions to more extended elaborations (Turner et al., 2018). In this thesis, *food environments* are defined as the interaction between people and food and the influences on dietary behaviour.

The model guiding the development, analysis and discussion of this thesis is “The Model of a Changing Food Environment”, presented in Figure 4. It aims to explain the two underlying determinants “External food environment” and “Internal and proximal factors”, in the previously presented framework (Figure 3). The model focuses on the underlying determinants for adolescents’ changes in acquisition and consumption affecting health and nutrition outcomes. It is based on the model from Turner et al. (Figure 1) and designed for adolescents’ changing food environments and to incorporate a human rights aspect.

The model is altered to suit adolescents specifically. The main changes in this model are the addition of the determinant “Peer influence” as a part of the internal domain describing social influencers of dietary behaviour. This determinant is related to “Marketing and information”, both of which are external drivers of the internal domain. A separate external determinant “Measures, policies and regulations” related to nutrition has been added to consider the structural measures related to nutrition. Finally, the model is linked to the external responsibilities and internal understanding of human rights, to consider the capacity to fulfil the right to adequate food. Otherwise, “Desirability” has convenience included and is here related to “Product properties” as adolescents’ perceptions of food and food composition intertwine, and “Availability” and “Access” remains alike Turner et al.’s model. The study’s interest lies within adolescents’ perspectives, hence emphasising the determinant Desirability of this model.

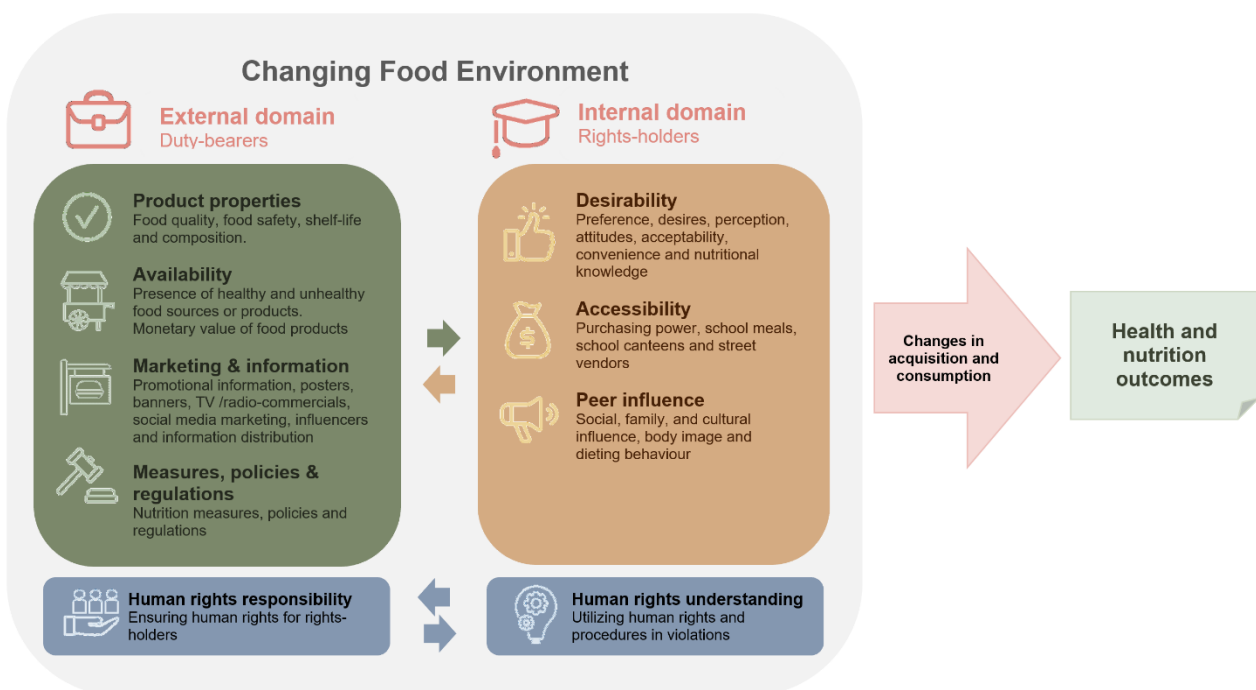


Figure 4. The Model of a Changing Food Environment for adolescents

The desirability of foods refers to the individuals’ inner motivation to consume food items based on taste, preferences, perceptions, attitudes, acceptability and nutritional knowledge. The desire for food is based on the external product properties, such as food quality, food safety, shelf-life and composition of the food. Food availability is the proximity to food sources or products and its monetary value. Accessibility is the individual’s purchasing power and direct access to foods, including school meals, school canteens, street vendors, shops and at house-hold-level. Marketing and information distribution of food products through different external media, influence individuals’

dietary behaviour. Peer influences may also be family, culture, friends, social influences, body image and dieting behaviour. Nutritional measures, policies and regulations vastly determine whether the external food environments had an encouraging effect on health and dietary outcomes. The food environments external domain represents the duty-bearers responsibilities and the internal domain represents the students' (as rights-holders) individual capacities.

4 Method

This master thesis aimed to explore the adolescents' perceptions of changes in the food environment and diet. A secondary aim was to explore the duty-bearers' perceptions of these changes and how they perceive their institution's responsibilities regarding the adolescents' unhealthy dietary patterns.

An HRBA was applied when planning and conducting the study. The aspect of the thesis was uncovered through an HRBA situation analysis. This was done by identifying vulnerable groups, the underlying causes, identifying duty-bearers, and lastly, identify responsibilities, resources, and motivation needed by those affected to claim their rights and by those obliged to fulfil the rights (WHO, 2009). Adolescents were approached as a vulnerable group exposed to (changing) food environments, and the duty-bearers responsible were governmental state actors at the national and city council level. Relevant HRBA principles applied to this study were participation, empowerment, and non-discrimination for the rights-holders, and accountability for the duty-bearers. The empowerment aspect was fulfilled by realising the respondent's right to express their thoughts and being able to speak in their language. The participatory aspect was achieved by the inclusion of adolescents and sharing their opinions on issues affecting them as rights-holders. Additionally, the adolescents' age was considered in the information dissemination. Non-discrimination was accomplished by including adolescents and ensuring gender equality. Accountability was provided through transparency throughout the research and by pointing out the duty-bearers responsibility to meet their obligations to respect, protect, and fulfil human rights and developing capacity accordingly.

The perceptions of the adolescents were emphasised in this research. Qualitative research was used to conduct this study, and this may have contributed to enhancing the principles of the HRBA. Further, Qualitative Description (QD) was applied as the research design, aligning with the research aims and objectives of interests. Both qualitative research and QD are presented below.

4.1 Study design

4.1.1 *Qualitative research*

Qualitative research aims at exploring the participants' insights, perspectives, perceptions, and experiences on a phenomenon of which one has limited knowledge (Thagaard, 2013). It can provide detailed, nuanced descriptions of the informants' behaviour, attitudes, motivation and barriers (Malterud, 1996). In research seeking for answers to questions related to "how", "why" and "what" about human perceptions, attitudes, behaviour and barriers, qualitative research methods can contribute to detailed descriptions of the phenomena of interest (Neergaard, Olesen, Andersen, &

Sondergaard, 2009). This approach is in contrast with quantitative research, which investigates questions answering “when” and “how often/much”, which yields statistical and mathematical results based on empirical investigation. Since the aim of this study was to explore participants’ perceptions of a phenomenon and retrieve detailed information, qualitative research was a well-suited approach. The method emphasises quality information, and it is therefore not necessary to have many respondents. However, meeting the saturation point, which is when new data tend to be redundant, is necessary (Given, 2008). Retrieving information from participants up to the saturation point fits the scope of and resources for this study. Qualitative research offers a flexible research process enabling the exploration of themes that emerges during data collection (Malterud, 1996). Flexibility was an essential aspect of the thesis since one could have missed out on essential aspects if a more rigid research process had been used.

Inductive research is explorative and seeks knowledge to emerge from the data in order to develop a new theory. Empiricism is the starting point in understanding the phenomena of interest. (Thagaard, 2013). Deductive research is the opposite and derives from existing knowledge to explore empiricism, where a hypothesis is developed, and the data collected is used to test the hypothesis (Thagaard, 2013). This master thesis is mainly inductive, although the themes and questions from the interview-guide were based on previous research and therefore has deductive aspects as well.

4.1.1.1 *Methodological approach: Qualitative Description*

QD originated in existing knowledge and is preferred when the aim of the research is a description of a poorly understood area (Neergaard et al., 2009). It presents a detailed and thorough description of an experience, phenomenon, process or an event by using language close to the informants own, to avoid interpretations of the data material (Baalwa, Byarugaba, Kabagambe, & Otim, 2010; Neergaard et al., 2009). However, in research, there is always some degree of interpretations. QD is often used when neither the lived experiences as in phenomenology, the interpretative meaning of an experience as with grounded theory nor thick descriptions as in ethnography is requested (Bradshaw, Atkinson, & Doody, 2017).

As this study seeks to explore and describe the involved adolescents and duty-bearers’ perceptions, without the intention to interpret the retrieved results, QD was deemed as the most appropriate methodological approach to explore the objectives of this study. The interview guide in QD is more structured than other qualitative methods (Neergaard et al., 2009). The data collection techniques which may be employed in QD include interviews of individuals, Focus Group Discussions (FGD), observations and document analysis. This thesis utilised FGDs for the

exploration of the adolescents' perspective to retrieve a wide range of perspectives and in-depth interviews for the duty-bearers as their areas of expertise varied. The ideal size of an FGD is between five and eight participants (Krueger & Casey, 2009; Malterud, 1996).

QD is reflected in the interview guide by its structured outline for individual interviews and FGDs. The design is supported by several essential aspects of QD, using purposeful sampling and maximum variation of participants. Furthermore, QD is reflected in the analysis by the adaptation to emerging themes, through thematic analysis and in presenting the results detailed, with a low interpretative nature. The presentation of the results is in a way that best fits the data, which is consistent with QD. In addition, the conceptual model of this study, a Changing Food Environment, presented in chapter 3.5, Figure 4 is reflected in both the analysis, through the results and in the discussion.

4.1.1.2 *The research team*

The research team consisted of the principal investigator (PI) and the assistant LT. To support the research team, Dr. PMR Associate Professor from the collaborating University from the Department of human nutrition and home economics (hereby referred to as Associate Professor), was the external supervisor and supported the research team throughout the data collection.

4.2 Sampling and participants

A purposeful sampling of participants, and selecting informants of maximum variation relevant to the subject, provide quality information to the phenomena of interest (Neergaard et al., 2009). Purposive sampling was applied to select informants to both FGDs and interviews. The Associate Professor and the PI collectively selected schools to sample for the research, based on the predetermined decision to sample schools with different socio-economic status from two geographical areas (urban and peri-urban) based on the Associate Professors' expertise and insight. The Associate Professor created a list of important state actors relevant for this thesis, then provided contact information on these persons.

4.2.1 *Recruitment*

Recruitment of Schools

The primary sample of this study was adolescent students in Kampala. Mid-teens are mature enough to have their reflections, knowledge, and experiences in relevance to this thesis. Ideally, in FGDs with adolescents, individuals should be the same gender and be within a maximum of two years of age-difference (Liamputtong, 2011).

Prior to the data collection, it was made sure by the Associate Professor and the PI that the schools and the duty-bearers were well suited for this study and met all inclusion criteria. Three inclusion criteria applied when recruiting schools. Firstly, both genders should be represented in order to provide one group of girls and one group of boys from each school to generate varied information. Consequently, same-gender schools were excluded. Secondly, the schools should have adolescents in the age group 15-17 years, which was the target age of this study. Thirdly, the school had to be a day-school and not a boarding school since it would be difficult to obtain written consent forms from the parents of children at boarding schools. In Uganda, adolescents under the age of 18 are considered a child and written consent from the students' parents or caregiver is required for doing research.

The sampling strategy was to represent an even number of schools from urban and peri-urban areas. Both in peri-urban and urban areas, schools with different socio-economic status were chosen. Sampling schools that differed in socio-economic status was based on the rationale of maximum variation.

Two different administrative areas, or "divisions", of Kampala's five divisions were purposively sampled beforehand, based on the geographical and socio-demographic area: the urban division Central Kampala and the peri-urban Kawempe division. The recruitment for participants to the FGDs was done in three steps, as several studies were planned for the same sample. Firstly, sixteen day-schools, eight within each of the two selected divisions, were randomly sampled for another study. Secondly, four schools, two from each division (Central Kampala and Kawempe), were purposively selected for this study based on their socio-economic status presented by the Associate Professor's local knowledge. Then the research team visited the selected schools and invited them to take part in the research and established contact with the Head Teacher. Information letters to the Head Teacher, parents, and students, including consents and assents forms (developed in accordance to the NSD templates (The Norwegian Centre for Research Data, 2018)) with contact information to the PI were handed out, and the aim of the study was explained (Appendix 3, 4, 5, 6, and 7). All the schools accepted to participate immediately and found space in their calendar for the research to be conducted within the given time frame. The students were purposively selected either by the Head Teacher or by someone appointed by the Head Teacher.

The target was to recruit 12 students from each of the four schools, to form two gender divided focus groups. Each of the groups would have 6 participants, resulting in 8 focus group discussions with 48 students in total. The final number of focus groups matched the target; however, the FGDs

varied in the number of participants, from four to seven participants in the different groups (Figure 5). The number of participating adolescents in this study was 44 in total.

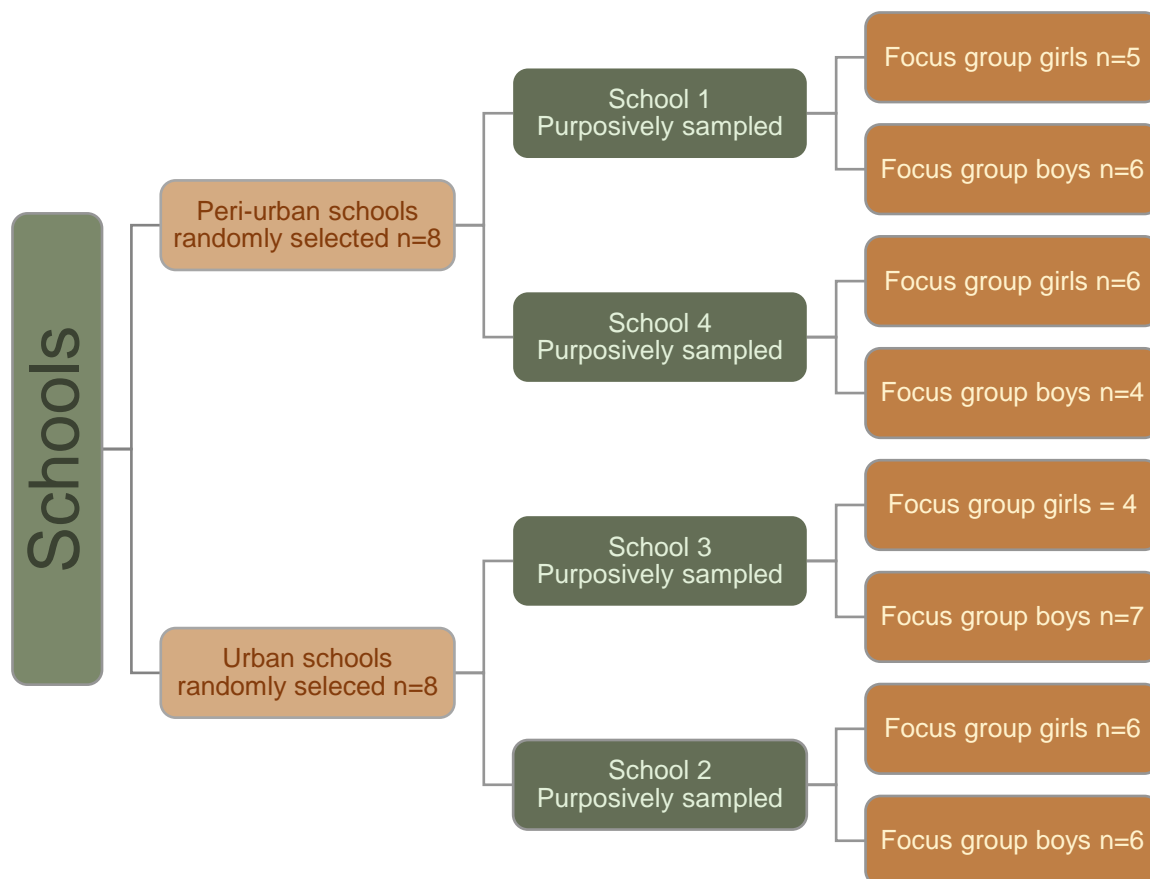


Figure 5. Flow chart showing the recruitment of students from urban and peri-urban areas with different socio-economic status (the 8+8 schools were sampled for another study)

The recruitment of the pilot school was done outside of the selected divisions. The procedure for the pilot sampling was the same as described above.

Recruitment of duty-bearers

The inclusion criteria for the duty-bearers was that they should be representative of authorities that had some relevance within the scope of the research. Relevant duty-bearers included authorities within health, nutrition, or school departments, or that in any way had a role in adolescents' health.

The recruitment was based on inputs from the Associate Professor. To gather as varied information as possible, the approach of maximum variation also applied in this section of the research. The PI and the Associate Professor purposively selected eight participants relevant to give insight to the research questions. First, the participants were contacted by phone to schedule an information meeting at their office to explain the aim of the study further and establish contact with the informants. At the meeting, the informants were handed out information letters and consent forms,

developed in accordance with the NSD templates (The Norwegian Centre for Research Data, 2018), with contact information to the PI. Three invited duty-bearers were unable to participate, resulting in five informants participating in this study. The enrolment of duty-bearers was demanding, the process was time-consuming, and contestants were more reluctant to participate.

The total number of informants that contributed to this research, including rights-holders and duty-bearers, was 49.

4.2.2 *Sample description*

4.2.2.1 *The adolescents*

The school system in Uganda is not based on age; therefore, the participating students were not necessarily from the same class, and possibly did not know the other participants in the FGD. Two of the schools sampled students outside of the age inclusion criteria in one group each, resulting in five students above the stipulated age range from both genders. Out of a total of 44 students, the median age was 17 years, ranging from 15 to 20 years (Table 1). No other personal information was obtained about the students, such as their health status or their socio-economic background.

Table 1. Descriptive table of participating adolescents

Focus group	Demographical placing of the schools	Age	Age range	Number of participants
School 1 Boys	Peri-urban school	16, 16, 17, 17, 17, 17	16-17	6
School 1 Girls	Peri-urban school	17, 17, 17, 18, 19	17-19	5
School 2 Boys	Urban school	16, 17, 17, 18, 18, 20	16-20	6
School 2 Girls	Urban school	15, 15, 17, 17, 17, 17	15-17	6
School 3 Boys	Urban school	16, 17, 17, 17, 17, 17, 17	16-17	7
School 3 Girls	Urban school	15, 16, 16, 16	15-16	4
School 4 Boys	Peri-urban school	16, 16, 17, 17	16-17	4
School 4 Girls	Peri-urban school	15, 16, 16, 16, 16, 17	15-17	6
Total:				44

4.2.2.2 *The duty-bearers*

The participating duty-bearers was a representant from the Ministry of Gender Labour and Social Development, a representative from the Nutrition Division at the Ministry of Health, a representative from the Parliamentary Forum of Nutrition, a representative from the Quality Assurance and

Standardisation at the Ministry of Marketing and a representative from the Kampala City Council Authority. Below in Table 2 is a list of the participating duty-bearers and their abbreviations. Out of the eight purposively selected duty-bearers, three were not able to participate in this study. The invited representative from the Human Rights Commission, The National Children’s Authority, and the Ministry of Education and Sports were contacted by phone but were not available within the given timeframe.

Table 2. Descriptive table of participating duty-bearers

Duty-bearer abbreviations	
NDMH	A representative from the Nutrition Division at the Ministry of Health
PFN	A representative from the Parliamentary Forum of Nutrition
CDMGLSD	A representative from the Community Development at the Ministry of Gender, Labour and Social Development
QASMM	A representative from the Quality Assurance and Standardisation at the Ministry of Marketing
PHKCCA	A representative from the Public Health Department at the Kampala City Council Authority

4.3 Data collection

4.3.1 Recruitment of moderators

To encourage participants to elaborate more in conversations, a moderator should be from the same racial or ethnic background to look familiar to the informants, speak the native language fluently and respect and understand the informant’s culture (Liamputtong, 2011). A local moderator is likely to make the participants able to identify themselves on some level with the moderator. Based on this, it was initially supposed to be two moderators, a female for the girls FGDs, and a male for the boys FGDs. The Associate Professor presented two former local students, a male, and a female, as potential moderators and research assistants. Both agreed to the terms and were provided with daily payment in accordance with the standards. The female assistant was a Luganda- and English fluent, trained moderator, clinical nutritionist, and MSc in Public Health. The male assistant was also Luganda- and English fluent, with a bachelor’s degree in home economics and education in hotel and institutional catering. The pilot test was conducted shortly after. The male assistant moderated the pilot with boys and one boy FGD before transferring to another project. PI also moderated one FGD of boys.

However, the results from these FGDs was less successful due to the lack of moderating experience. Ultimately, this resulted in an all-female research team.

4.3.2 *Development of interview guides*

Two separate semi-structured interview guides were developed as data collection tools to address the research objectives: one in order to conduct the FGDs with the adolescent students (Appendix 1), and another one for the interviews with the duty-bearers (Appendix 2).

The semi-structured interview guide for the FGDs was based on the underlying determinants for the rights holders in The Model of a Changing Food Environment, focusing on food environments and human rights understanding. It opened with simple questions about the adolescents' food and drink preferences and their thoughts on why they preferred those products (Appendix 1). These questions might have evoked participation as they were seen as comfortable and effortless for the respondents to answer. This first section partially covered "Desirability" of the developed model and uncovered the adolescents' dietary preferences and perceptions. The second and third sections also addressed "Desirability", tackling nutritional knowledge by addressing healthy versus unhealthy foods, and "Peer influence" by investigating body image. The adolescents' changing food environments were the fourth section and the focus area for the interview guide; it explored the adolescent's thoughts on the dietary changes and how they perceive Traditional and Western food in regard to being healthy or unhealthy. This section potentially covered "Accessibility", "Availability", "Product properties", "Marketing and information", "Desirability" and "Peer influence". Section five focused on the "Accessibility" and "Availability" of healthy food choices and perceived barriers to eat healthily, thus also "Peer influence". The sixth section addressed "Marketing and information" and disclosed the impacts of advertisements and perceptions on marketing exposure. The last section of the interview guide focused on the determinant "Human rights understanding", its usefulness, perceptions on the right to enough and adequate food and what to do in human rights violations.

Initially, the questions were open-ended, but after revising the interview guide following the pilot test, the first questions were mainly close-ended and easily understandable, followed-up by probes or follow-up questions (see further details below). The moderator expressed that there were no right nor wrong answers and that the research team was there to learn from them, and not conversely.

The interview guide for the duty-bearers interviews was very open, and even though the background and knowledge of the duty-bearers varied, the interview guide remained the same (Appendix 2). It opened with introductory questions about their position and responsibilities, before moving on to noticeable changes and whether they were considered healthy. This part of the interview

guide addressed “Availability” and “Product properties” and potentially “Marketing & information” from The Model of a Changing Food Environment. The next part focused on marketing and investigated if the duty-bearers perceived an increase in the marketing of unhealthy foods, and how they thought it affected the adolescents’ health status. This part correlates to the aspects of “Marketing & information”, “Product properties” and “Availability”. Further, they were asked what they perceived to be barriers to a healthy diet for adolescents, as well as the institutions’ measures to improve adolescents’ dietary behaviour and other relevant measures. Altogether, this potentially covers all aspects of the developed model. Lastly, the interview guide covered whether the availability of unhealthy food and increased marketing of unhealthy food is related to human rights and how they view their institution’s responsibility related to the human rights of adolescents.

Common in the development of the two interview guides were considerations to avoid personal information and to accommodate the well-being of the informants. The structure of the two guides focused on dramaturgical progress, which correlates to the participants’ readiness to share information during the interview (Thagaard, 2013). Before initiating the study, there was no relationship established between the research team and the participants. The PI briefly informed the participants about the study, the reasons for conducting it, and aspects that would be covered before each session.

In the opening of the interview, it is crucial to building a rapport (Morris, 2015), which was done by starting the conversation with warm-up questions that were easy to answer and by avoiding threatening questions that could cause distress (Leech, 2002). The first questions intended to stimulate interest and set the context, which builds trust and enhances the willingness to participate fully (Liamputtong, 2011). The logical structure of the interview guide made the conversation flow naturally. After some questions, the participants felt comfortable, and more challenging questions were posed. Challenging questions should be posed midway through the interview when the participants have become comfortable, and before they lose their interest (Morris, 2015). After the final questions, the participants were given the opportunity to share other relevant perspectives. At the end of each session, the research team thanked the participants for their contribution and for providing valuable information and insights.

All questions were developed to engage the participants’ thoughts and reflections. The questions were formulated general and not addressed directly towards the participants as individuals, but rather as a group of either adolescents’ or duty-bearers. Generalisation would serve the purpose of generating information through interactions between the informants and the group, and avoid

gathering individual reactions (Litosseliti, 2003). The intention was to create a personal distance to the participants' answers, make it easier for the participants to answer the questions, and to avoid accumulating personal information.

4.3.2.1 *Pilot testing the interview guides*

Prior to the commencement of the data collection, two interview guides were pilot tested to evaluate whether the questions were relevant and understandable for the target group. The pilots provided the opportunity to make alterations to the research tools where it was necessary. Besides, it prepared the research team to the research environment and made the team aware of their responsibilities during the interview sessions.

The pilot testing of the interview guide for the FGDs took place at a school comparable to the purposively sampled ones but in a different division. Two separate FGDs, one with female and one with male students, took place in a classroom at the students' school. During the FGD pilots, it became apparent quite early that the initial version of the semi-structured interview guide did not work according to plan. The students had trouble understanding the questions, as they were too open and general, even when including the additional questions. The moderator broke down the questions and explained, but it was time-consuming, and could potentially result in leading questions, without retrieving much valuable information. The pilots took approximately 1 hour to conduct. The students were invited to fill out evaluation forms voluntarily and anonymously (Appendix 8). It allowed them to give feedback on what they thought was positive and negative, make suggestions, and elaborate on subjects they may have been uncomfortable speaking about openly. A total transformation of the semi-structured interview guide was made after the pilot. The new interview guide was based on the same topics as the previous one, but the questions were more specific after the alterations. Consequently, the new semi-structured interview guide had several more questions.

The results of the FGDs pilot were limited, but comparable to the findings of this study. The FGD pilot findings are not included in this thesis. The second semi-structured interview guide was not pilot tested, and the results from the first session are included in this thesis.

A teacher at the FGD pilot school was chosen for the pilot testing of the interview guide for the duty-bearers, because of time restrictions and convenience. The PI conducted the duty-bearer interview. Aside from some minor language barriers, the interview was successful. The interview lasted for approximately 20 minutes. No alterations were made to the semi-structured interview guide. The findings from the duty-bearer pilot were not included in this thesis.

4.3.3 *Conducting the interviews*

4.3.3.1 *Focus group discussions*

In the opening statements of the FGDs, the students were told that if they preferred, they could speak in their native language to assure effortless communication. Nevertheless, participants communicated fluently in English throughout the FGDs, though certain words were spoken in Luganda. The foreign words were translated immediately by the assistant to ensure proper transcription. Apples and water bottles were offered to the participants, to accommodate the culture and underline the content of the thesis. This gesture intended to make the participants feel welcome and to provide an including, trustworthy and open environment. All the students consented to have audio recorded sessions, and the recorder used was a ZOOM H2next Handy Recorder borrowed from OsloMet – Oslo Metropolitan University (OsloMet).

All FGDs were conducted in a designated room at the selected schools after school hours, except one group that had their final exam immediately afterwards. In all cases but three, there were no interruptions or other persons present. Privacy was important to make the informants feel free to talk without constraint. In one of the groups, the non-participating people who were present were asked to leave. Another group was moved into another room after the opening questions due to interruptions. The third group did not have any other alternatives than being seated in a classroom with a teacher and other students reading to prepare for their final exam. This group was interrupted midway by their teacher, asked to rush through the questions, due to their exam had been moved up two hours, resulting in fewer and shorter answers and the exclusion of the whole human rights section of the semi-structured interview guide.

The female assistant led all FGDs except two FGDs with boys when she was unable to attend. The assistant got more comfortable with the interview guide, the more FGDs she moderated. She quickly connected with the students and was able to make jokes and provide a positive atmosphere, regardless of the students' gender. In one FGD, the male assistant moderated, and the PI moderated the second. In comparison, these two FGDs did not have an as comfortable atmosphere, and the students were not as outspoken.

In general, the atmosphere in the groups was eased, and the dialogues between the informants fluent. A few groups were quite quiet and retracted, which fuelled fewer discussions, hence less data material. The assistant tried to engage them and ask more questions, but when no one answered, it was a bit uncomfortable for everyone. In other FGDs, some informants spoke more than the others and contributed to much information alone, which resulted in others participated less. Overall, this

was positive because it caused fewer interactions from the moderator, and the discussion could thrive between informants. In a few groups, all the students had a lot of contributions, which led to loud discussions between the informants and conversations often out of topic. These groups were easy to retrieve information from because they felt comfortable, and the moderator could easily steer them if the discussion went too far off-topic. All FGDs lasted between 1 and 1 ¼ hour, except for the one that was cut short, which lasted 30 minutes.

4.3.3.2 *Duty-bearer interviews*

Originally, the trained moderator was supposed to help enrol and conduct the duty-bearer interviews, to lower the barrier for them to participate and to speak without constraint due to the differences in English pronunciations. However, due to time constraints, the PI carried out the enrolment and the interviews of the duty-bearers alone.

Four of the five duty-bearer interviews took place at the first information meeting at the informant's offices by their request. Most offices had co-workers present during the interview. The duty-bearer interviews were shorter because of the shorter interview guide, though one of the informants took the time and gave a lot of information and insight. The interviews lasted approximately 20 minutes, except for the extended one that lasted 1 hour. All interviews were conducted in English, as all participants spoke fluent and understood English perfectly. All the informants consented to have audio recorded sessions, the recorder used is mentioned above.

4.4 Transcription and data analysis

The results of the data analysis should have a detailed and thorough description of the theme, and the language should be similar to that of the informants (Neergaard et al., 2009). The strategy for the analysis was to sort through the data material to identify similar phrases, themes, and important features.

4.4.1 *Transcription*

Initially, the assistant (the moderator) was supposed to help transcribe the FGDs and assist the PI with the transcription of the interviews. However, eventually, she did not have time to transcribe, and all transcriptions were carried out by the PI. Having one person transcribing is, on the one hand, an advantage in the analysis process, but on the other hand, a disadvantage as no one could ensure the quality of the transcription. The audio recordings were, at times, difficult to decipher. The students tended to mumble (either unclear or soft speech), use low voices, or talk multiple at once. In addition to loud background noise, which was considered as far as possible in advance, the transcription process was elongated.

All audio recordings from the interviews and the FGDs were transcribed in English using intelligent verbatim transcription by the PI. This method excludes fillers and repeating words and was chosen in order to preserve the meaning since English is not Ugandan's first language, and especially the adolescents used many fillers in their sentences. Due to time constraints, immediate transcriptions were not done as recommended (Magnusson & Marecek, 2015). In transcription, audio recordings are precisely written, including laughter and interruptions, yet it does not reflect the whole truth. A holistic perspective protects the information by putting it into its natural context (Malterud 2011). The audio recordings were saved after transcription and deleted at the end of the research period.

4.4.2 Coding and analysis

The transcriptions were entered into HyperRESEARCH 4.0.3, which is a program that helps to systemise the process of coding and categorisation. Both inductive and deductive approach was applied in the making of the codebook. There is a balance between deductive coding that derives from the philosophical framework and inductive coding, where themes emerge from the participants' discussions (Fereday & Muir-Cochrane, 2006). The codebook was developed based on The Model of a Changing Food Environment (Figure 4), the interview guide's structure and directly by the transcribed text. The PI coded the transcriptions inductively by appearing themes into a codebook of describing codes, not interpretative codes, to get an overview of the main issues that emerged. Then the transcripts and coded sections were reread and re-coded to identify further sections relevant to the central research questions and the developed model. Several group-codes had sub-codes attached, see Figure 6 below for details.

Content analysis and thematic analysis is the preferred methods in QD. Content analysis determines words frequency, trends and patterns, their relationships and the structures of communication and quantifies results (Mayring, 2000; Pope et al., 2006; Gbrich, 2007). Thematic analysis is "a method for identifying, analysing and reporting patterns (themes) within data" (Braun & Clarke, 2006, p. 79) and is qualifying. The purpose of this research was to identify and report themes; therefore, thematic analysis was applied. Both the coded text and the original transcriptions were used during the analysis to preserve some of the contexts; additionally, at times, it was necessary to relisten to the audio recordings. The most informative and relevant quotes related to the research aim and objectives were extracted and included in this study. Quotations selected for analysis were abstracted from their broader context, thus potentially stripped of important cues or underlying meaning (Guest, MacQueen, & Namey, 2012). Therefore, quotations in the presented results were to the extent possible, placed in thematic coherence, which also complies with the interview guide. The quotes illustrate the participants' experiences and perceptions and bring the reader closer to the data.

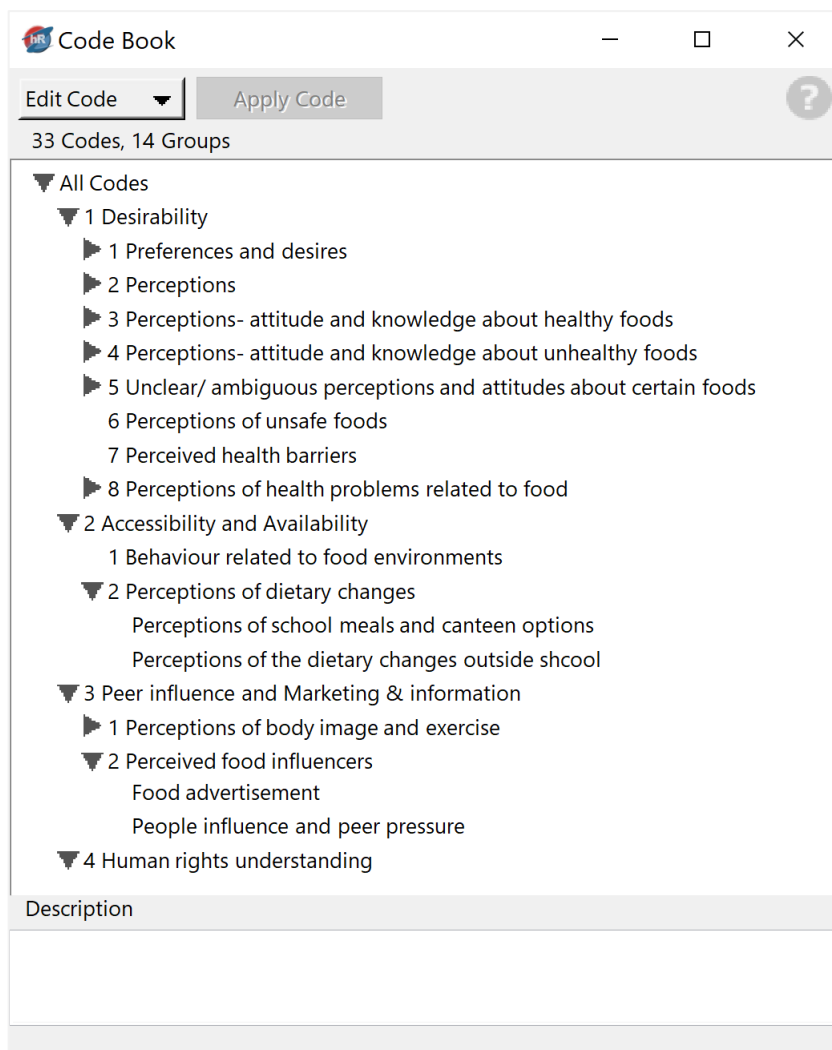


Figure 6. Screenshot of the codebook from the FGDs in HyperRESEARCH 4.0.3

The transcripts from the FGDs had 33 codes divided into four group-codes with nine sub-groups (35 codes initially divided in 14 group-codes), and the transcripts from the duty-bearer interviews had 35 codes divided into eight group-codes. Throughout the analysis, it was possible to trace the statement to the original transcripts. Finally, all statements were traced back to the transcripts to get the full picture of the statement. The presented quotes are close to the original statements, excluding fillers to make the quotes as readable as possible (Guest et al., 2012). The codes were ultimately organised according to The Model of a Changing Food Environment, and the structure within the group-codes was arranged according to the interview guide.

4.5 Ethical aspects

This study was conducted in collaboration between OsloMet – Oslo Metropolitan University, Department of nursing and health promotion and Kyambogo University Department of human nutrition and home economics (Appendix 11). Ethics applications to conduct the study were admitted

to and approved by the Norwegian Centre for Research data AS (NSD), the Kampala Capital City Authority (KCCA) in Kampala Uganda, Makerere University School of Public Health Higher Degrees Research and Ethics Committee (MAKKS REC) in Kampala Uganda, as well as Uganda National Council for Science and Technology (UNCST) in Kampala, Uganda (respectively Appendices 12, 13, 14 and 15). The invited schools received an information letter and a permission form to consent to the study (respectively, Appendices 3 and 4). When this was filled out, the students were handed out an information letter and a consent form for their parents or caregiver to read and fill out, in addition to an assent form for the students to fill out to participate in the study (respectively Appendices 5, 6 and 7). The students with signed consents and assent forms were asked to participate. Notice, the students were informed that there would be no consequences for participating in the study or for what they said during the FGD, and the information shared between them would not be talked about with others outside the group. The duty-bearers also received an information letter about the research and a consent form to participate in the study prior to the interview (respectively, Appendices 9 and 10). All participants were informed that the study was voluntary, anonymous and that they could choose to gain insight from the study or withdraw from the study at any time without giving a reason. During FGDs and interviews- an audio recorder was used with consent. Based on the voices of the informants, the audio recordings contained information that could indirectly identify the participating individuals. The collected data material was stored in a locked cabinet and destroyed and deleted after the study was completed. All approvals, information letters, consents, and assent forms provided in this study are attached in the appendices.

5 Results

This chapter presents the findings from the FGDs and duty-bearer interviews, respectively. The findings are presented in a thematic order and attempt to respond to the aims and objectives.

5.1 Findings of focus group discussions

The results from the FGDs reflect objectives 1-4 (see chapter 2.1 for details) and give an insight into the adolescents' perspectives on food and dietary changes. Even though all questions were asked to reflect the situation of adolescents in general, many students tended to answer based on themselves and their own experiences.

5.1.1 *Desirability*

This section provides information about the adolescents' perceptions of food and their food preferences.

Water bottles, sodas, and fruit juices were the most preferred drink for the students. Their most preferred food was different types of rice dishes, *posho*, and other Traditional dishes. In terms of snacks, the most desired were in descending frequency order: biscuits and cakes, *chapati*⁹ and *samosas*¹⁰, crisps and popcorns, and nuts and fruits. Notice that *chapatis* and *samosas* were described as snacks. Other snacks mentioned were in addition *rolex*¹¹, kebabs, pizza, chicken, burgers, and pancakes. Many students were provided with money to buy such snacks at school breaks. The (unstructured) observed canteen selection was mostly water (boiled or bottled), sodas, *chapatis*, and biscuits. Some canteens also offered energy drinks, crisps, popcorns, nuts, and individual pieces of wrapped sweets or confectioneries.

5.1.1.1 *Perceptions of healthy food and drinks*

The students acknowledged that healthy food is necessary to maintain proper body functions and to build the body during adolescence. Being healthy was described as exercising, having a healthy diet, getting enough sleep, and the absence of stress and sickness. Healthiness was often linked to living longer lives and avoiding diseases, such as diabetes, kwashiorkor, marasmus, and obesity. According to them, a healthy diet should be balanced and contain fruits, vegetables, fish, eggs, water and milk, and meals should be steamed or boiled. A few students also commented that a persons' genes impacted on the health and size of their bodies.

⁹ Chapati is a wrap made of flour, water, oil, salt and potentially sugar.

¹⁰ Samosa is a fried triangular pastry with a meat or vegetable filling.

¹¹ Rolex is an egg omelette with vegetables wrapped in a chapati.

“it might not depend on what you eat at the times, it may be on what you do. If I, a teenager I move myself in activity and sports, that’s when my body type and also the food I eat, that makes me somehow healthy.”

(Boy focus group, school 4)

A good example that reflects most of the students’ perceptions of healthy foods is a student who said that anything planted in the ground was healthy, such as fresh fruit, vegetables, beans and grains. Homemade juices and meals boiled or steamed, were perceived as healthy. The adolescents believed that they could avoid diseases by eating healthy food.

In all the seven groups that were asked what a balanced diet was, the exact same happened; one student in each group answered: “A meal that contains all food values”, then another or multiple students added: “In the right amount”. They all knew that *posho* have carbohydrates, beans have proteins, and most of them knew that vitamins are found in fruits and vegetables. Two students also mentioned minerals.

“Now, like a posho and beans diet, it is very healthy because at least the beans contain these proteins and the posho contains carbohydrates. And they use other things – we are used to fry the beans, like the tomatoes, the green peppers and the onions – those contain the vitamins, so it’s a very good diet.”

(Girl focus group, school 1)

5.1.1.2 Perception of unhealthy food and drinks

Junk food and food with too much cooking oil, sodas, and energy drinks were mentioned as unhealthy food and drinks. Although the students knew sodas were unhealthy, they still drank it because they found it tasty and because they were told by teachers that it was energising. All the adolescents enjoyed unhealthy food, and they liked the smell, taste and sight of it. They described this food as “tasty” and “delicious”.

“The unhealthy foods, I think, they are the foods when you add oil with them while cooking them, they can become unhealthy.”

(Girl focus group, school 3)

“Sometimes we do associate with those unhealthy foods because sometimes the unhealthy foods they have good taste”.

(Girl focus group, school 3)

All the students seemed worried about expired food, fertilisers, additives, and hidden components of their foods and the effect on their health. However, one student believed some preservatives added nutrients to the food, thus was healthy. Both angles are presented in the quotes below.

“if I take fruits, vegetables – at least for me they are better, cause they don’t contain fertiliser, because they are fresh, compared to the recent ones.”

(Girl focus group, school 1)

“It [Western diet] is healthier when they have preserved it in a good way. Because some preservatives, they preserve food by frying them, and the more fats they add, cooking oil, the more feeds the body.” “This juice, which is not fresh, they can add preservatives, some preservatives are good.”

(Boy focus group, school 1)

During the FGDs, several ideas about the correlation between food consumption and health effects appeared. Most of the adolescents had observed that overeating caused overweight or obesity and other diseases. A few girls, including one girl who claimed she had ulcers, stated that beans caused (peptic) ulcers, other suggested causes were *matoke* and *posho* with beans. Also, according to some of the girls, oily foods and sodas caused acne, which some had heard from doctors. They said doctors often recommended fruits to recover from sickness; thus, fruits were regarded as very healthy to the adolescents. Nevertheless, one student claimed that jackfruit led to diarrhoea. Two students believed that eating the same vegetable often or mixing some vegetables were dangerous. A student claimed that mixing beans and meat in one meal caused stomach-ache, and another said that sugar led to diseases, presented in quotations below.

“there is a bean that makes me feel, that makes me get ulcers when I eat it – after some, my stomach gets big.”

(Girl focus group, school 2)

“I think when you eat food mixed with, for example, beans and meat at the same time, at times, you can get stomach-ache.”

(Girl focus group, school 1)

“sugary things, it raises, you can get some diseases. Some people get diabetes, some pressure such kind of, so you have to balance it.”

(Girl focus group, school 1).

5.1.1.3 Perceptions of the Traditional diet

The common perception of Traditional food was that it was local, unprocessed, and fresh from the garden. Vegetables commonly used was *matoke*, sweet potatoes and cassava, and the common dish was *posho* and beans. Some pointed out that Traditional food is boiled or steamed with pots, not fried in oil with frying pans or fryers.

“The Traditional one, they are these common foods that is planted in the gardens, like sweet potatoes and beans, cassava, matoke, vegetables.”

(Boy focus group, school 2)

“It’s [Traditional food] boiled, not fried. Yams, cassava, bananas, sweet potatoes, unfried bean.”

(Boy focus group, school 1)

5.1.1.4 *The adolescents’ perceptions of whether the Traditional diet is healthy*

A Traditional diet was healthy according to all students across the eight focus groups, though two students were somewhat uncertain. The hesitation was due to the recent chemical usage for faster crop growth. Nevertheless, most students said that fresh fruit and vegetables were healthy. All the students said that a Traditional diet consisted of fresh fruit and vegetables. A student believed that the Ugandan people used to live longer lives before the introduction of Western food, implying that Western food was the cause of the shorter life expectancy.

“Those guys from long ago (...) they eat balanced diet unknowingly because they last longer”.

(Boy focus group, school 2)

5.1.1.5 *Perceptions of the Western diet*

Western diets were described as recently introduced foods, such as pizza, burgers and French fries, and often referred to as foreign or imported. They commented that the food shown in movies was Western, and they wanted to eat that food. There was a broad agreement among the adolescents that this type of food was prestigious to buy and eat. Western food was not necessarily eaten to suppress hunger, but they bought it to acquire prestige and show their friends that they could afford it. Some ate Western food only on special occasions, such as parties, graduation, Christmas, Easter and some Sundays, while others said that they ate it every day.

“Western foods – I think they are just introduced; they were not taken long ago.”

(Girl focus group, school 3)

“It means prestige; if you are eating a pizza, you can know that I am rich [laughter]”.

(Girl focus group, school 2)

5.1.1.6 *The adolescents’ perception of whether the Western diet is healthy*

There were very conflicting opinions in all FGDs and even within some participants about whether the Western food was healthy or not. Some said that Western food was very healthy and that it was healthier than local food. Western food was described as healthier because it contained (“natural components and nutrients”). One student said that Western food was healthy because he thought the people had done much research, over a long period of time, to figure out how to make food without losing nutrients in the process. Another student thought Western food could contain different nutrients

than the local food, thus contribute to a more diverse diet, and thereby, he could maintain his health and avoid diseases.

“A Western diet is healthy because I think those people, that side, took time to find the way to prepare the food without losing its nutrients and without using too much oil, so it’s more healthy than the local one. The local people have taken travel to find that out.”

(Boy focus group, school 4)

“When we depend on this food of ours, thoroughly, thoroughly, thoroughly, I might contract kwashiorkor. Yet if I at least take the other food, maybe I diverse my diet at least.”

(Girl focus group, school 1)

Some argued that Western food was unhealthy, but it depended on the type of Western food and their frequency of eating it. One student said that junk food obviously was unhealthy. A student stated that it was ok for the body to eat Western food once a week, but not daily because it would lead to obesity. Another student said that it was healthy because the ones who ate it were healthy, even though she said that the same people who ate this food told her that the food is unhealthy.

“It depends on the intake. When you take, like in a week, take at least once, that’s ok for the body, but once you take it daily, I think it leads to obesity.”

(Girl focus group, school 2)

“I would say that it is healthy cause those who eat it are also healthy; however, those always tell you that food is not healthy, it’s not healthy to your body”.

(Girl focus group, school 3)

Some students said that Western food was not healthy at all. One student stated that the food was unhealthy but popular and fancy. Two students thought it was unhealthy and worried about the contents of Western food, such as frying oil, cholesterol, and preservation chemicals.

“According to me, it’s not (healthy). Most food are fried and contain cholesterol.”

(Boy focus group, school 1)

“much of their food contains chemicals for preservation, so that’s why I say it’s not good for the body.”

(Boy focus group, school 2)

5.1.2 **Measures, policies & regulation; Food safety**

Some students were concerned about the food safety of Western food. They worried about the possible health consequences, sources of contaminants, and that the food could contain sources of infection leading to diseases. They worried about the production process, from start to the finished product.

“It’s not healthy because some food we eat them, but we don’t have any idea about them, like sausages. We don’t know where they make them; they might be dirty.”

(Girl focus group, school 1)

“And even they also bring chaps [chapati], kebabs, which are fried. If you eat them so much, you end up getting diseases because they contain a lot of oil. You just contract diseases out of nowhere.”

(Girl focus group, school 1)

The students also worried about food safety in the canteens and shops outside of school. One student from the boy group in school 2, talked about some common juices on the market that they did not trust was safe. A girl from school 1 was hesitant about the ability of water purifiers and feared to buy un-boiled water. Thus, she spent more money on water bottles to be sure it was safe for drinking. One girl worried about the tinned food, she was afraid that the can could rust and contaminates the food. In addition, another girl mentioned the consumption of artificial rice made of plastic and its possible long-term effects.

“those tinned food, you put them in those tin, they can get rusty, and it can spread some diseases in our bodies”.

(Girl focus group, school 1)

“there was a time when they said Uganda used to import plastic rice from China, so you don’t know. First of all, when you’re buying, you think its normal rice, you come and cook, but then you don’t know what you put in your body, because they realised that it was just plastic rice, so that means everybody had tasted that food. Maybe it will have some long-term effects in the future”.

(Girl focus group, school 2)

5.1.3 **Availability and accessibility**

In this section, the food environments were addressed, through school foods, the adolescents purchasing power, access and availability of foods and their dietary changes.

5.1.3.1 *School food*

According to the students, the school fees determined how much the school board could spend on school meals. Even though the schools were from urban and peri-urban areas, all schools served *posho* and beans every day of the week. Therefore, the students said they had told their mother/ caregiver not to serve *posho* at home. Although some schools had changed the school meal and served rice a few times, all students wanted diversity in the school meals. The students also used the school canteen, but the selection was described as very oily and invariable.

“Here at school, we eat only posho and beans, posho and beans”.

(Girl focus group, school 1)

“we don’t have any options; we just eat whether you like it or not”.

(Girl focus group, school 2)

“they changed our meals once, I joined here in 2016, but since then they have never changed the meal.”

(Boy focus group, school 2)

5.1.3.2 Affordability

Several stated that the most significant barrier to eating healthy was poverty or a shortage of money. Biscuits, popcorn, chips, *samosas*, and *chapatis* were cheap and what everyone could afford. The students also mentioned that they knowingly bought unhealthy food because of their low price, accessibility and attraction. In other cases, the lack of money prohibited the students from eating what they desired.

“mostly in Kampala, the cheap food are the oily foods, like the samosas, chapati and so that’s what the youths afford”.

(Girl focus group, school 4)

“For me, I want to explore more, these other stuffs, like pizza, but I can’t afford those things because my pocket is low. So that’s why I eat local food.”

(Boy focus group, school 4)

5.1.3.3 Availability and access to food

One group mentioned, “The immediate environment you are in” as a key barrier to eating healthy food. One student in another focus group said that sometimes when he was in a rush hour, he would rather have a soda than food. Biscuits, crisps, and popcorns were popular because of the availability at school, easy access and low prices. Additionally, the students preferred food items that were portable and shareable with friends. The availability of fast food (“It’s easily provided”) and convenience (“it can easily be prepared”) were reasons for purchasing fast food. The availability and accessibility of unhealthy foods and drinks were in great contrast to the availability and accessibility of healthy foods and beverages according to the students. The unhealthy food attracted the students, even though they knew they could cause them harm.

“Unhealthy foods are the one which are most of the time available, then the healthy one, like you cannot find any shop without doughnut here and some areas, try to look for fruits, they are not there. It’s true.”

(Boy focus group, school 3)

“This food which ‘cause sicknesses, they are always sweet, they attract you, you want to avoid them, but you cannot.”

(Girl focus group, school 2)

5.1.3.4 *The changing food environment*

All the participants in four FGDs agreed that adolescents, in general, had experienced a dietary change in the past five years. In three FGD, the students had conflicting opinions. In one of these groups, a student said that there was no change, based on her own diet. In the second group, one student answered “no”, although he stated that there probably would have been a dietary change if the parents had shifted from having limited resources to become somewhat wealthier. In the third group, two students argued that they had to eat what the parents brought to them, which was Traditional food and rice. They also argued that the school meals were the same as before; the Traditional dish *posho* and beans. One group was unfortunately not asked about experiencing dietary changes due to a lack of moderating practice.

The dietary changes mentioned by the different focus groups were the introduction of sweets, chocolate, junk food, eating at restaurants, the exchange from fresh potatoes to fried chips, eating bread in the morning, and having chicken and sodas on Sundays. These foods and drinks were originally savoured for special occasions but had now become customary. One example was sodas, which used to be for special occasions only. Now the intake of sodas was comparable to drinking water, even though the students said they knew sodas were unhealthy. One girl stated that a few years earlier, youths had only heard about pizzas, but several stated that these kinds of foods had now become common.

“For me, I think that there’s been a change, cause right now foods, there are various foods on markets like bread, but five years ago or ten, guys never used to eat those things, (...) you’d find someone’s eating his tea in the morning with mainly potatoes and cassava, but right now you have to go for a cake, biscuits. The diet has really changed from that [Traditional diet] one actually.”

(Boy focus group, school 2)

“everything that is processed is common these days”.

(Boy focus group, school 2))

Most students said that they themselves and other students were the ones who had changed their diets. Although, in three FGDs with female students, all the students agreed that the girls were the ones who had changed their diets the most. The reason given for girls to change their diets was because girls gained weight more quickly than boys and had to be careful with what they ate. Below is an excerpt of the conversation between the moderator (M) and the adolescent informant (I):

M: *“Who are the youths who have changed their diets?”*

I: *“The ladies, the girls. Because I want to maintain my shape, of course, compared to the boys – the boys eat a lot! For them, they are thin; they are not fat. But, for them, he can eat and eat and eat. And once you take like posho for a week – if you are a girl, like me, according to my body, I grow so fat.”*

(Girl focus group, school 1)

Three focus groups collectively stated that the dietary change was positive because they themselves were healthy – some said they were healthy because of the food changes. They also thought the change was positive because of convenience and that it had provided employment in Uganda. The food introduction was appealing to them because they wanted to increase their dietary diversity.

“The change is positive on our side; first, it has enabled me to become healthy and strong. I have no diseases. It is positive to me”.

(Boy focus group, school 4)

A discussion opened in four groups when the students were questioned about whether the change was positive or negative, although only one person argued for the positive side in two of the groups. Most students said it was negative and argued that the food contained a lot of fat, which would lead to overweight. Some said they had no knowledge about the foods’ content and its possible health effects, referring to the possible consequences of preservatives, chemicals and additives. The positive aspects of the change were dietary diversity and the possibility of receiving nutrients that the Traditional diet lacked. Two of the groups concluded that it was equally positive and negative.

“For the positive side, I think when you take it, there are some foods we don’t have in Uganda – and they don’t have some [nutritional] values, so the Western foods can have values and (...) add on your nutrition intake. On the negative side, you don’t know the ingredients they put in; you don’t know the machines where the machines that are used to process them, so. They can sometimes lead to diseases like cancer, heart problems.”

(Girl focus group, school 2)

The group of boys at school 3 agreed that the change was negative, though there was no further elaboration of the perceived reasons, because of sudden time restriction.

5.1.4 **Peer influences and Marketing & information**

Social influences, family influences, and cultural influences in addition to marketing and promotional information, influences on body image and dieting behaviour are covered in this section on peer influences and marketing. The students portrayed several peer influences, which are presented thematically below with their respective findings.

5.1.4.1 *Family and culture*

Many of the students stated that uneducated parents/ caregivers acted as barriers for adolescents to achieve a healthy diet. On holidays, in the villages, family members and villagers could restrict the students' diets based on their own food beliefs. One student had a family member who told her not to eat biscuits because it was harmful to her body. Another student was denied eating oranges or mangoes because it would cause her fever.

“if you go there in the village, the one mother can say don't take oranges and mangoes; you will get fever. They do act as barriers.”

(Girl focus group, school 3)

Religions, clans and norms also prohibited the students from having a healthy diet. Muslim adolescents are denied eating pork, and some clans are denied eating other food, for example, land fish. The students thought these food taboos led them to nutritional deficiencies. Partial ingredients declarations on products or at shops and restaurants, and text written in a different language than their first language acted as barriers, limiting the adolescents from eating certain foods.

“Food taboos. Some clans, if I am in the mamba clan, I am not supposed to eat it [land fish]. Then I am having deficiencies and lacking proteins.”

(Boy focus group, school 1)

“And pork is a taboo in our culture so; you don't know if it has pork or anything. And not all of us know English.”

(Girl focus group, school 4)

5.1.4.2 *Peer pressure*

The students had no problem saying they ate Traditional food, but two students stated that *matoke* was food for the elderly, not youths. A student claimed that some believed eating chips and chicken indicated a higher status than the ones who were eating, for example, *samosas*. Several mentioned that when their older siblings went to school, they brought packed lunches containing Traditional food. Some students said they had to bring money to buy fast food, because of peer pressure and acceptance. On notions of bringing packed lunches to school, the students said, "I would be embarrassed".

“I think even like, five years ago, maybe, youths, like when you could come, some people who packed food, you come with your sweet potatoes, it's ok. But now these days, if someone sees you coming every day, do they have sweet potatoes [laughter], those local, local stuffs, they'll start laughing at you. You have to come with just money to buy the junk food.”

(Girl focus group, school 2)

Outside of school, the students wanted to eat prestigious food (chips, sausages, and chicken) to show that they had money, even if they could not afford it. It was expected to eat Western food when they were out with friends, and on dates, if not, there would be protests.

“Me I think, when they’re at school, of course, that will be posho and beans, but when they go outside; chips, sausages, chicken [laughter], they go for that. Cause sometimes they want to show that they have money, they want to show prestige, or they want to show that they are not used to some other foods, yet sometimes they eat them in secret [laughter].”

(Girl focus group, school 2)

“Sometimes you want to eat something. When you go with your girl, you won’t order for cassava; she will be like: What? Order pizza! [Laughter].”

(Boy focus group, school 2)

5.1.4.3 Perceptions of body image

Most of the adolescents liked and preferred their own bodies and body size, which they described as medium, and some said slender. Being slender meant that the girls could easily find fitting clothes to buy. The boys were more attentive to the importance of having a firm body with muscles, and some even mentioned six-packs. Some girls generally talked about maintaining or losing weight. Most weight loss efforts started because of peer pressure from friends or family. One girl stereotyped the pressure from parents at home to lose or gain weight. Depending on the child’s appearance, the parents would tell them to start eating more food or stop overeating.

“I think everyone is our preference. I want to be not too small, not too big.”

(Girl focus group, school 1)

“A healthy body should be fit with less fats, with some good amount of muscle.”

(Boy focus group, school 3)

“If all your friends are small and you are the only one who’s fat, you will fight it ‘till you become small like them [several giggling], yeah, that peer influence.”

(Girl focus group, school 2)

One group of girls talked about a shift in what body type that most girls wanted to achieve. They said that two years back, it was trendy to be slender, but at the current time, the trend was to be fat. They also mentioned plastic surgery as a way to achieve this kind of body. Below is an excerpt of the conversation between the girls at school 2:

- *“If it’s like two years back, people wanted small people; everybody wanted to be small. And now, everyone wants to be fat, so it’s the trend for the body to look like that.”*
- *“Yeah, that’s why people even go for plastic surgeries, these things of ...”*
- *“Yeah, to get fat.”*
- *“You change your body size because you see everybody is like that, so you also change yours.”*

The adolescents also linked the physical appearance to someone's healthiness. Some mentioned that one should be tall enough and should look balanced. Being healthy also meant the absence of sickness signs; the skin should not be pale (due to reduced blood flow/ anaemia), and the hair should be black (not brown). Aside from that, the girls were very concerned with acne and expressed that a healthy person should be free from acne.

5.1.4.4 *Perceptions of exercise and physical activity*

Physical exercise was mentioned in all focus groups to achieve or maintain a healthy body, because it prevented diseases, freed the body from diseases and contributed to a long and healthy life. Stress relief, bodybuilding and punishments were some of the reasons the students exercised in addition to health reasons. Some mentioned that they could eat unhealthy food, as long as they exercised because they believed that through exercise, unhealthy food would leave the body.

“Exercises prevent you from getting sicknesses, like heart sicknesses, cancer. If you do physical exercises, it's very hard for someone who does physical exercises to get like obesity, cancer, you know fats in the body. It helps in building also the body”.

(Girl focus group, school 2)

“Whenever I try to do exercises, I am trying to make my body to get free from some diseases”.

(Girl focus group, school 4)

“During exercises, like it can even help you to keep eating your young food, but after eating it, you go do exercise, everything comes out, so you keep on your diet.”

(Girl focus group, school 2)

Most of the boys were physically active. Some of the boys were on the schools' sports team and exercised every day. Some exercised 3-4 times a week; they played football, ran or carried out strength training. In the boy group at school 4, one student had a fixed training day by his own initiative every Sunday, which was the typical day for most students to carry out exercises. The others carried out exercise when they needed to relieve stress or during holidays. The boys walked to and from school but did not consider that exercise because (“we're already used to that one”). When the girls were asked if they exercised, they answered “maybe”, “rarely”, and “not much”. All the girls considered their walking distance to and from school as exercise. They walked between 20 and 90 minutes each way, though the girl with the longest duration said she could use 60 minutes depending on her speed. Some girls said they exercised once or thrice a month or on holidays. The activities they endured were to play, skip, jump, dance, aerobics and run.

The girls from school 4 mentioned several barriers that prevented them from doing exercises: they said that they felt lazy, tired, or not in the mood to do exercises and would rather watch movies

online. It was hard for them to remember to be physically active; they claimed that only older people ran and said it was boring to go to the gym. In addition to that, the gym was expensive – they would rather spend money on airtime (mobile phone call/mobile data money), and strength training was (“weird”) to do as girls because they could get (“too much muscles”). Essentially doing exercises was a waste of time; they would rather spend time mastering a topic at school.

5.1.4.5 Marketing

The students said that on their way to school, there were several advertisements for food and drinks on posters and billboards. They remembered various brand names and recalled advertisements of sodas, energy drinks, beers, dairy products, potato crisps, fast food restaurants and food delivery services. All the advertisements they remembered were for unhealthy foods and drinks, except for dairy products and food delivery advertisements. Every day on their way to school, the students also bypassed small shops frying snacks, such as *samosas*, *chapatis* and cassava. The smell and sight of fast food led many of the youths to purchase such snacks.

“Sometimes, when you see an advert you feel like buying the thing [product] and have a taste of it”.

(Boy focus group, school 4)

“Because they have advertised a new product saying it’s nutritious and you have to taste it. And the diet is good”.

(Boy focus group, school 1)

When asked how the students felt about being affected by adverts, the students mentioned feelings of desire. Most often, the students just wanted to possess the advertised product, and their feelings concerning how adverts affected them, depended on their means for procurement. Initially, they felt good about purchasing and eating the advertised product, but after consumption, they felt bad because of the potential health consequences. Some stated that the advertised products often were unhealthy and led to diseases.

“Sometimes good, sometimes bad”.

(Girl focus group, school 4)

“When I cant afford it, actually I feel bad because I would like to eat it”.

(Girl focus group, school 1)

All students stated that they were more exposed to advertisements than the previous generation. The increase in exposure was due to technological development, which had enabled quality graphics on huge billboards and screens, in addition to the accessibility of personal technological devices and

their marketing arenas. The adolescents mentioned several platforms for marketing exposure: television, internet, social media (Facebook, What's app and Instagram), magazines, and radio.

The students confirmed that they were affected by marketing. They said the advertisement led them to buy the product when they could afford it. The advertised food was perceived as prestigious and had led them to change their diets by using persuasive pictures and language. One student commented that everyone could access the internet, which was considered a major marketing arena.

“like five years ago, there were limited adverts made on televisions and radios, but now, they want to advertise everything, to create market for their products. So, they will say this one gives you this; this one gives you this, when you eat – you get this”.

(Girl focus group, school 2)

“Internet is now everywhere, in the village, in the city [laughter], everywhere everyone can access it.”

(Girl focus group, school 2)

5.1.4.6 *Health information distributors*

In most cases, according to themselves, the youth's health knowledge was based on experience either directly or through observation. Doctors had thought a lot of the adolescents' health information after they or someone they knew had a health issue. Teachers also taught them health information, but the students also relied on information from programs on TV and Facebook.

“There are some programs I watch, concerning health, so at least I learned something. Yeah, you can use Facebook. Because people can post things about the negative effects of drinking soda.”

(Girl focus group, school 1)

5.1.5 *Human rights understanding*

All the participants had heard about human rights and could name a few different rights, though they were not able to account for what human rights truly entails. The most mentioned rights were the right to freedom, speech, education, religion and food. The students' interpretation was that human rights governed a person and that the rights were entitled to everyone to enable freedom, peace and equality. Below is an excerpt from the conversation between the moderator (M) and the informants (I) in the boy group from school 1.

M: *“Why should we have human rights?”*

I: *“To keep unit.”*

I: *“And promote peace in the society.”*

I: *“Helps people to express themselves”*

I: *“Share equality.”*

I: *“To be proud in our country.”*

(Dialogue between informants, boy focus group, school 1)

There were some different opinions about the extent of human rights, though it did not lead to further discussion on the matter. Most students stated that a person was free to do what they wanted; many students stated that human rights were determining what was allowed to do and not. The students appeared to believe that the rights also applied between individuals.

“The freedom for anyone, for people to enjoy what they desire. But then, they shouldn’t deprive others of their rights as well.”

(Boy focus group, school 2)

“Those are the allowed actions, things a person is allowed to do and should not go beyond those ones.”

(Boy focus group, school 2)

When discussing human rights violations, the participants mentioned their parents and the school as violators, thus the duty-bearers, and the government responsible for justice. All the students knew that they could complain about it if someone violated their rights. First, they would complain to their parents, then their teacher or somebody that they trusted (for example a local council at the village) and then act accordingly to their advice. They would report the case to the police and, if necessary, take the issue to court. Some said that they would demonstrate and strike peacefully to be heard. In two groups, a few students said they would choose to ignore it, pray to God and bear with the situation if someone corrupted or if their parents were the ones to violate their rights. Some realised that they would not act on their parents’ violations in fear that going to the police would send their parents to jail. These students argued that the parents’ poverty may deprive their children of education or even healthy food and that they would rather prefer their parents to be home.

Some students had experienced challenges in complaining about the school meal regime, they wanted a change in their school meals, but the meals were changed only once. One group mentioned that their school had a system for raising complaints or giving suggestions. Once the complaint was written (anonymous or not), they would put it a suggestion box, and then the administration would follow up on the matter. Not all of the suggested issues were followed up, but some were addressed.

“we have a lady they call “XXX” [at school], so we take our complaints to her so, she writes about it and discuss it with the teacher and then, she gives you – a solution”.

(Girl focus group, school 4)

5.1.5.1 *The right to food*

Regarding the right to enough and sufficient food, the adolescents talked about the right to eat what one wants, to get satisfied, prevent hunger and to avoid disease. One student said that the right to

adequate food meant that food that could easily be afforded at any time. The students also mentioned a balanced diet and to eat according to the body's nutritional requirements. One girl from school 4 thought it was the right to eat healthy food.

“For me what I say it's a right, you have something to take, but not beyond the body, not beyond what the body needs”.

(Girl focus group, school 3)

“When you can easily afford food at any time”.

(Girl focus group, school 1)

5.1.6 *The rights holders' ideas to improve dietary behaviour*

To achieve a dietary change in the future, the students had a few suggestions; change the school meals and to get access to an area to cook food at the school. It seemed like a good idea to offer Traditional meals (especially rice with beans or stewed fish and groundnuts, *posho* with beans or boiled foods) fruits and fresh homemade fruit juice (made from passionfruit or mangoes) at the school canteens. The students expressed that they wanted to try new things and that they wanted the canteen selection to vary.

When asked about what the students would like to buy, some students answered sodas, different sweets, snacks and junk food, but several students wanted to buy fresh, homemade juice and fruit. Apples were an example of desired fruit, although the price and lack of filling satisfaction would lead the adolescents to buy a *rolex* or biscuits for half the price instead. One student thought it was a funny thought for the canteens to sell Traditional food, though some other students were serious and would like to buy such foods.

“I would have chosen something, which would be healthy, like – fruits, oranges.”

(Boy focus group, school 4)

An excerpt from the conversation in the girl focus group from school 2:

- *“Because now, you cannot say that canteen is going to start bringing local food, because it's the healthy one. Must start selling sweet potatoes [a few giggles].”*
- *“Sometimes I want to buy the Traditional food, instead of bringing these chapatis – at least they can start up cooking the Traditional food, and the milk, yoghurt.”*

5.2 Findings from the interviews with duty-bearers

The results from the duty-bearer interviews reflect objectives 5-7 (see chapter 2.1 for details) and provide the duty-bearers perceptions on the changing food environment, food marketing and their understanding of their own responsibilities in improving adolescents' food environment.

5.2.1 *Product properties*

Under this section of product properties, food quality, food safety and composition are covered.

Foods of low quality and food safety were discussed as issues by the representative from the Public Health Department at the Kampala City Council Authority (PHKCCA) and the representative from the Quality Assurance and Standardisation at the Ministry of Marketing (QASMM), respectively. However, the representative from the Community Development at the Ministry of Gender, Labour and Social Development (CDMGLSD) stated that the Uganda National Bureau of Standards (UNBS) does not allow harmful and expired foods on the market and burns- or throws it away.

“They overuse the oil when you boil oil for a long time it changes to a complex compound that is carcinogenic. They overheat it, and it’s very dangerous to human being. You want to save money, so you use the same oil every day.” “When you use this normal oil, it turns black, and it smells, so it affects the quality of the products.”

(Duty-bearer interview, QASMM)

“Then the other one is poverty, people, when you look at, an example given of the artificial eggs they were selling them at a cheaper price than the natural egg that are laid by our birds so somebody on ground, a student, a youth or adolescent, would prefer the cheaper one to the one which is expensive yet is good for his health.”

(Duty-bearer interview, PHKCCA)

5.2.2 *Availability and Accessibility*

This section focuses on the presence of food sources and their prices, in addition to the food environment changes of Kampala. The representative from the Parliamentary Forum of Nutrition (PFN) thought that the accessibility and affordability of foods impacted the adolescents' food choices. Accessibility was perceived to pose as a potential barrier for adolescents to make the “right” dietary decision, because that food may be inaccessible or unaffordable.

“Economics, I think what the barriers about accessibility and affordability. These young people I think wants to eat something that is good, they even might know what is right, but because they may not have the money to purchase them and also may not be in a place where they can easily access the food, I think it greatly impacts on their food choice.”

(Duty-bearer interview, PFN)

On the contrary to how the students described the school meals being repetitive, CDMGLSD described the school meals as diverse.

“most of the schools offer food, and the food they offer is of different kinds. (...) Today if they eat posho and beans, tomorrow sweet potato and other times, rice, other times beans like that.”

(Duty-bearer interview, CDMGLSD)

Regarding the food environment, it was stated that “junk food is on the rise”, and this was supported by three of the duty-bearers. They had noticed an increase in fast food restaurants, especially in urban areas. They mentioned that sodas and junk food like chips and chicken, burgers and pizza had become very common. Besides, they stated that a lot of different foods had become common to deep fry, like eggs, chicken, pork, cassava and *matoke*. Junk food was available everywhere according to them, and especially in the cities according to the representative from the Nutrition Division at the Ministry of Health (NDMH). Kentucky Fried Chicken (KFC) (fast food restaurant) had established in Uganda, and there were several rumours that McDonald’s also would establish soon.

“We used not to have these restaurants, which sell fast foods/ junk foods. But now, they are really on the increase and especially in the many parts of the city.”

(Duty-bearer interview, NDMH)

“I understand that Mc Donald’s are also coming, so it is on the rise.”

(Duty-bearer interview, QASMM)

Of the five duty-bearers, three had noticed a change in food behaviour. NDMH said that youths tended to prefer junk food, compared to homemade foods. In addition, the representative pointed out that unhealthy diets are the leading factors to NDCs, in which Kampala was experiencing an upsurge. QASMM stated that junk food is addictive and druglike and that one cannot stop people from making their own dietary choices. PFN noticed that the family dinner situation and composition had changed because of work demands.

“Of course, this is a negative change, because we know the effect of junk foods on the health of an individual and this unhealthy eating is one of the factors that are leading to non-communicable diseases ...and we are experiencing an upsurge in NCDs. For nutrition, of course, we see a lot of obesity around. So, there are negative impacts of this transition.”

(Duty-bearer interview, NDMH)

“That [chapatti, rolexes] is actually what they are feeding, so people are no longer sitting on table, like it used to be, eating as a family, they are scattered because of work demand and others. Just find themselves eating food that is not what we can call a complete dish.”

(Duty-bearer interview, PFN)

5.2.3 *Marketing & information*

Marketing of food and drinks through various platforms (posters, banners, TV and radio commercials, social media marketing, and influencers such as friends or celebrities), in addition to promotional information and programmes and its effects, are covered in this section.

According to the duty-bearers, the essential health and nutritional information channels were on TV and radio. They stated that nutritional information was distributed to improve the population's health and educate them through TV shows. Governmental structures were also used to connect with communities and even household-level to improve nutrition knowledge.

“There is a lot of advisement, if you are on radio, TV, you'll find other people say this is the season where we are producing matoke, beans, posho, so we like people to get advantage of this food. We have health officials from ministries of health and health institutions that go on radio, TV, to teach people. But then there is also a delivered effort of government using the government structure, that reach communities up to household-level, where nutrition is tackled as an important element in order to improve of health.”

(Duty-bearer interview, CDMGLSD)

5.2.3.1 *How duty-bearers perceive the marketing of unhealthy food and drinks*

Three of the duty-bearers worried about the marketing of unhealthy food and drinks and its power. Advertisement for pizza and junk food, not only in Kampala but also up-country, was according to the NDMH bad for Uganda as a country. PFN stated that adolescents are attracted to what is trending and exemplified that; if a popular musician comes to Uganda and likes something, the adolescents usually picks up on it and follow his or her preferences. QASMM worried about collaborations between brands, for example, Coca-Cola advertisement in KFC's adverts. All three duty-bearers talked about the upsurge in marketing on several platforms.

“So, I realise that the more they will follow the adverts from businesspeople, I think the more disadvantages there will be... And when you look at even the obesity among the young people you realise that there is a problem, so these adverts actually are affecting the food intake and the choices, food choice and intake on the young people, I think it's a bad trend.”

(Duty-bearer interview, PFN)

“Big manufactures are using adverts and targeting the youth to make sure that they keep buying. Coca-Cola adverts, Pepsi; they put chips, chicken for KFC. So, they are working together. These are the people who have money; they can promote their products. So, most of them [youths] can access TV's, they see. They feel they should be part of the other group, that is eating those fancy foods.”

(Duty-bearer interview, QASMM)

5.2.4 *Human rights responsibility*

This section focuses on the duty-bearers understanding of human rights and their institutions' responsibilities. In addition, this section addresses whether the duty-bearers perceive the marketing of unhealthy food to be a human rights infringement.

There was a broad agreement that food, in general, is a human rights issue, PFN particularly mentioned the absence of nutritional information as a human rights infringement. At first, QASMM did not think their institution had anything to do with human rights, but changed opinion once pointed out that their certification-label on accepted products, informed the consumers of its content and functioned as quality assurance. PFN said they tried to improve and maintain the right to adequate food and nutrition security, which meant to observe human rights. The PHKCCA and CDMGLSD only referred to their guidance by the constitution of Uganda, that has the human rights embedded when asked about their institutions' human rights responsibilities. NDMH was aware of the institutions' human rights responsibilities, which elaborated in the quote below.

“these adolescents have the right to good health; they have the right to access safe and nutritious diets. So, it is our role to ensure that the rights of these adolescents are not violated. (...) We have to be sure that the adolescents are actually receiving all the information that they require. Regarding their health and nutrition, and it's very, very important”.

(Duty-bearer interview, NDMH)

5.2.4.1 *Duty-bearers understanding of whether marketing of unhealthy food is a human right infringement*

QASMM made a point that no one has said that the advertisement of unhealthy food is wrong. NDMH clearly stated that the increase in junk food, availability and marketing were related to human rights and expressed that adolescents must be protected against the aggressive marketing of unhealthy food and drinks.

“It is advertisement everywhere, but I have not heard anybody saying this is wrong.” “We haven't got a team that relates the human rights and these adverts. So, there is a [communication] gap”.

(Duty-bearer interview, QASMM)

“Yeah, of course, it is a human rights issue. (...) when it comes to advertising such unhealthy food, then it infringes on somebodies human right.”

(Duty-bearer interview, NDMH)

5.2.5 *Measures, policies & regulations*

This final section addresses the duty-bearers' perceptions about nutrition policies and regulations, in addition to portraying their measures to improve the adolescents' diets.

The duty-bearers pointed out weak laws as a challenge in improving adolescents' diets. Poor quality products could access the market at a low price by not following proper procedures. QASMM mentioned that the Consumer Protection Bill would address these issues if it passes the parliament.

“And maybe the other negative impact is weakness of the laws of our country. Cause somebody comes from anywhere, he starts selling things without following the proper procedures and hence he puts things on the market without any interruptions under the disguise of investment ... This is why we are getting goods of low value, low quality on our markets.”

(Duty-bearer interview, PHKCCA)

“Somebody is producing imitation juice and label it as vitamin c, ... it is an imitational product; they just put chemicals and colour and mix and give to the consumers.”

(Duty-bearer interview, QASMM)

5.2.5.1 *Duty-bearers plans to protect and improve food environments and address unhealthy dietary behaviour*

It appeared that all institutions except PHKCCA mentioned the draft on “Uganda Nutrition Action Plan II” which had stagnated in housing. PHKCCA, however, had ordinances and regulations in forms of laws protecting the food safety of the consumers. CDMGLSD had produced a nutrition book where some parts were translated into local languages and had district officers that moved around and talked to the public about nutrition. The PFN mentioned a new policy for food security called The Zero Hunger Project, which they were hoping to finalise and implement. In addition to that, they were promoting a school feeding program. As expected, NDMH had most plans to address unhealthy dietary patterns. They had a whole division allocated for preventing NCDs and create draft action plans and guidelines.

“What we are doing is that we are trying to promote and see if we can bring up a school feeding program. There are some partners that have come up to promote school-feeding program, and we are trying to say that we can actually take it up as government and parents, each school parents to make sure that they have something for the child to eat while at school.”

(Duty-bearer interview, PFN)

“We are looking at finalising our action plan to address health or nutrition-related diseases related to NCD's. (...) we have draft guidelines, for healthy eating, which we are yet to accomplish. So, we are looking for resources, we are sure we have our strategy completed, complete our guidelines, and then we also develop information, education and

communication messages that should actually be rolled out to all the Ugandan population. (...) And since adolescents are mainly in schools, we want also to work with the schools, the health education sector and ensure that these messages are actually disseminated to them. (...) And also, to inform you that we are developing a training package for adolescents, so actually, it's going to be comprehensive".

(Duty-bearer interview, NDMH)

5.2.5.2 Nutrition education as a tool to improve healthy eating

Education was mentioned by three of the five duty-bearers as a tool for dietary behaviour change. Nutritional education either through educating the teachers and the adolescents' supervisors or directly to adolescents through TV, radio, workshop presentations, books, magazines and health programmes. They wanted to sensitise the consumers about possible dangers and discourage them from junk food. The duty-bearers also talked about the challenge of promoting commodities, QASMM suggested an NGO advocate for these issues. CDMGLSD stated that the adverse effects of oily foods were already part of the children's curriculum from primary 1. PHKCCA did not mention nutrition education.

"we need to have these managers, the school administration, the teacher's anybody who handles young people, in schools, health facilities, social centres; we should have people who have nutrition knowledge."

(Duty-bearer interview, PFN)

"we need to come up with an advocacy team. Maybe an organised association, that can advocate for, that's what we are missing, that an NGO can come out and advocate for these issues. (...) But I think it can be an organised body or whatever and talk about it strongly, and I think it will be a change".

(Duty-bearer interview, QASMM)

6 Discussion

The discussion of the results is presented in two parts. First, the study design is discussed, then the results are discussed in relation to the research aims, objectives, model and relevant literature of the study.

6.1 Discussion of methods

This study aimed to explore perceptions of dietary changes and marketing practices among adolescents and authorities within food and health. Qualitative research was selected to provide an in-depth understanding of the participants' perspectives about the phenomena by exploring and reflecting the participants' reflections, thoughts and beliefs. Students from both genders and different geographical areas and duty-bearers from national and city council offices provided a broad spectrum of perceptions to this research. Needs and contextual conditions were explored using QD and thematic analysis.

6.1.1 *Data collection*

Advised by the Associate Professor and the assistant about the local costumes, codes of conduct, and possible pitfalls, the experience of the fieldwork was positive and filled with goodwill and minor setbacks. Leading up to the fieldwork, the PI had become somewhat familiar with the aspects of the culture, way of living and social context of Kampala, which may contribute to a better understanding of the adolescents' points of view and experiences.

6.1.1.1 *Recruitment*

The recruitment of the schools was easy as the Head Teachers were engaged and very accommodating. Even though the students approached their final exams; thus, it was not the best timing for the adolescents to participate in a research project, every invited school participated in the study. The participants from the selected schools were recruited through the schools-staff without the research team present. The school staff may have had personal reasons for inviting particular students, and the participating students may have had their own agendas, like pleasing the teachers or missing chores at home. The participating students may also have had a particular interest or competence on the subject. These aspects may question the representativeness of the sample for adolescents in Kampala. However, the information between the focus groups corresponded, thus within the desired setting of the study, was somewhat reproducible. Schools from different socio-economic status were selected from each division to create a sample with maximum variety.

The recruitment of duty-bearers was, on the other hand, challenging. Five of the eight duty-bearers invited to the study participated. The selected duty-bearers were in different ways devoted to

health, nutrition or both, and their insights may not be reproducible for other duty-bearers from the same or other sectors. Some of the informants were uncertain that they could provide useful information, and their answers may have been given in efforts to please the PI. The participants' own agenda may also have influenced their responses and therefore, the results. Nevertheless, the participants' interest in the area contributed to valuable information.

6.1.2 *Conducting interviews*

It requires skills from the moderator to establish a connection with the informant, and between members of a focus group. The moderator must be aware of the usage of pauses, attitudes and body language (Liamputtong, 2011). The information produced in a session is determined by the participants' and moderators' combined knowledge, and the developed or pre-existing social relations. The moderator must be able to be neutral and not portray own views, attitudes or knowledge that could be leading the informants (Liamputtong, 2011). Both the research team and the participants were affected by place and context, causing necessary adaptations to each session.

The presence of the PI (European) most likely affected the participants and their answers. Hopefully, they felt comfortable after a while and got used to it in time for the crucial questions. When answering questions about unhealthy foods such as Western or fast food, it could be possible that the participants were afraid of insulting the PI and restricted themselves.

One must consider that some participants may not have been reflecting the truth, either deliberately or unintentionally. Some might have been nervous and hesitant to express their honest opinions. The research team's background in nutrition could have introduced bias, and its exact effect on the results remains unknown. It is expected that some participants answered to please or impress the research team, and by doing so took space and time from important and genuine perceptions. Statements outside the research scope were limited.

The language barrier was most often a challenge with the students, and not so much with the duty-bearers as their vocabulary in English was more extensive.

6.1.2.1 *Conducting the FGDs*

The initial interview guide was open to make space for the adolescents to discuss the topic in question, but the pilot test reveals that this was too intimidating, and the participants were reluctant to participate. Every question had to be broken down and explained. It was apparent during the session and by the students' comments in the evaluation form that the interview guide was challenging. These pilot FGDs were not included in the study. The amended interview guide made the role of the moderator more active, while it still provided room for discussions.

The female research team could potentially have affected the answers given by the male participants (Liamputtong, 2011). However, the discussions were of non-sensitive themes, and it seemed that the moderator connected equally with the boys as did with the girls. The male assistant and the PI were inexperienced at moderating and did not utilize the interview guide's potential. These FGDs were in great contrast to the sessions the female assistant held. However, both FGDs were included in the results and analysis.

In the first FGDs with the moderator, there were smaller room for pauses, less probing and fewer repetitions of the questions asked. Over a short time, the learning process increased the confidence in both moderating these groups of adolescents and in adhering to the interview guide. This difference in confidence may have affected the answers given, and ultimately the presented results. Preferably, this confidence should have been present from the first FGD to avoid such potential impact.

The students seemed fond of the moderator, who provided a relaxed, safe and relatable environment. Humour was a great tool to take the edge off the anticipating students. Liamputtong concluded that humour helps to gain a deeper understanding and develop a "smooth" social relationship with the participants (Liamputtong, 2011). The assistant was familiar with the terms and issues discussed, which may have facilitated the communication and group dynamics. However, moderating FGDs with adolescents, who most likely just wanted to go home, was at times challenging, and required concentration and patience.

Some students and groups were shy and quiet, but most times, the students participated willingly, and the communication flow within the group was good. The students could relate to each other, and eagerly discussed the presented topics, unafraid to speak up if they disagreed to one another. When the enthusiastic discussions were not relevant for the study, the moderator calmly let them share their point of view, before timely interfering to steer them back to the topic. In the two cases where there were other people present, one must predict that it had a constrained effect on the students' willingness to share information.

The feedback from the students both orally and through the evaluation forms was predominantly positive. The students enjoyed participating in the FGDs and learn a lot from each other.

6.1.2.2 *Conducting the duty-bearer interviews*

The PI was quite inexperienced in moderating interviews prior to the study. In the first duty-bearer interviews, the PI did not steer the participants sufficiently, in efforts to maintain an open platform, but interfered in the subsequent interviews. The study's scope was more comprehensible to some participants than to others. Some participants required more elaborations to the questions in

focus, as they were quite open. In some cases, this resulted in some information that was not very relevant to the thesis. At times the informants talked about the general population instead of adolescents, and at other times and they talked about their office agendas unrelated to the posed questions. Different context of the interviews required different approaches. Some informants had other people present during the interview, which may have influenced their response. The interview guide for the duty-bearers remained the same for each participant, even though they were from different backgrounds. However, it was useful to use the same interview guide for all of them because it made it possible to compare their statements and elaborations.

6.1.3 *Data processing*

6.1.3.1 *Transcribing*

The research assistant moderated six FGDs, the male assistant moderated one FGD and the PI moderated one FGD and five duty-bearer interviews. It is recommended to transcribe immediately after conduction, to alter and improve the interview guide, and to begin the analysis during data collection (Magnusson & Marecek, 2015). However, that was not possible in this study. Transcribing in retrospect may hinder potential personal and structural improvements and inflicts the ability to recall certain aspects of the sessions. Liamputtong suggests that researchers or moderators transcribe their own group discussion to reawaken the familiarity of the data, which becomes useful during analysis (Liamputtong, 2011). The PI transcribed the data material and had been present in all sessions and therefore, familiar with the social aspects of the data material. However, the PI transcribed alone. Unclear audio made the transcription challenging to decipher and elongated the process.

6.1.3.2 *Coding and analysis*

In line with QD, the citations for analysis and in the presented results are the participants' own words. QD is less theoretical and is less interpretative than other qualitative methodologies (Neergaard et al., 2009). Some interpretation occurs, even though the researcher tries to remain neutral. The analysis becomes somewhat subjective because it is affected by the person analysing (Neergaard et al., 2009).

The quotations from the FGDs were not labelled with an identification tag of the participant, strictly because the interest of the study was the adolescents' general opinions, not that of the individuals, which also was a requirement from NSD as this was non-sensitive research. The selected quotes were extracted from as many different sources as possible, to base the information on multiple respondents and portrayed a variety of perceptions (Guest et al., 2012). Quotations from all of the eight FGDs and all five interviews were included in the analysis. Additionally, all duty-bearers were represented in the analysis.

6.1.4 *Validity considerations*

Validity refers to the effects of the approach on the research outcome, and the reflections about the researchers' perspective (Thagaard, 2013). Internal validity requires transparency about the relevant methods and research instruments (Thagaard, 2013). The data collection and analysis were planned systematically to minimise bias and increase the trustworthiness of the findings. Capturing multiple realities of the phenomena, quantitatively and with a variety of participants, also increases validity. To increase external validity; the study was conducted in a setting and situation that is typical to the phenomena in order to relate the findings to similar environments and increase transferability (Thagaard, 2013).

Dependability (reliability, consistency and accuracy) was secured by a detailed description of the context and research methodology (Thagaard, 2013). The presented results provide conversation excerpts, in addition to elaborated information on specific topics such as human rights. All quotes can be traced back to the respective transcripts. The data material was sampled from relevant participants, which strengthens the relevance. Reliability refers to the ability to provide the same results in repetitive studies (Thagaard, 2013). However, in qualitative research, the results are produced between the researcher and the informants, and the results are interpreted, which makes reproducibility impossible (Thagaard, 2013).

6.1.4.1 *Strengths and limitations of the study*

Qualitative research is time- and resource consuming, which restricts the total number of participants. The data material may have been strengthened by conducting a second FGD with each focus group. A second FGD would have made the participant more familiar with the research team, which potentially could have provided more information, especially with the more restricted participants. It would also have provided the opportunity to clear up any potential confusions after transcription. In the evaluation forms, some students expressed a wish to repeat the session, as they found the discussion enjoyable. Although it would be preferable with two FGDs per group, the information required for the study was successfully and efficiently retrieved with one session.

The study was conducted in collaboration with local researchers familiar with the context and conduct of Kampala. Their insights provided quality information to the research and valuable reassurances for the participants. More importantly, the talented moderator who moderated most of the FGDs ensured good data material conducted in a pleasant atmosphere.

Memory bias was reduced by using an audio recorder, which preserves the informational context and increases the validity and strength of the study (Thagaard, 2013). However, some may be

uncomfortable and restrict their answers. Except for one group, the adolescents did not seem to be affected by it. After every session, the research team debriefed and discussed potential influences on the participants' responses, in efforts to separate the personal experience from the students, which strengthens the results (Guest et al., 2012). To further reduce memory bias, statements were at times counted to ensure to present the most commented statements.

Field notes were written by the PI during the pilots of the FGDs to support to the audio files. Unfortunately, writing notes took too much focus away from the session's occurrences. When transcribing the pilots, the PI noticed some misconceptions and inaccuracies, thus decided not to take notes and rather be fully present during the sessions. This presence seemed to be more comfortable for the participants. A second assistant fully devoted to taking notes would be preferable and may have provided extended information. Transcriptions were merely carried out by one person, which secures a holistic interpretation of the data material.

The parents/caregiver's significance to the adolescents' health, dietary patterns and related behaviour were acknowledged, in addition to the teachers and the individual school facilities. Their perceptions were not explored in this thesis but could have provided a more in-depth understanding of the adolescents' dietary behaviour. This study does not provide information on what the students actually ate, to verify the adolescents' claims.

The research on the changing food environment was done in Kampala. The adolescent students participating can be considered to be from somewhat resourced households as they attended school, in comparison to an estimated 42 per cent of Ugandan adolescents who are not students (Ministry of Health et al., 2016). The results are of local interest, as the results may have been entirely different in other parts of Uganda.

6.1.4.2 *Ethical considerations*

The best interest of the participants was safeguarded throughout the research. No participant was forced to answer questions nor complete the session. To ensure the participants' anonymity, no names, occupational positions, nor locations were revealed in the results.

During the sessions, it was sometimes challenging to act neutral and avoid revealing personal and immediate reactions, such as smiles, laughter and facial expressions. Especially when the participants searched for answers and reactions. In these particular events, mostly in the FGDs, the moderator simply said: "we will leave that for you to discuss afterwards". At times, it was natural to smile, be affirmative and agree with the participants, to continue the conversation, and these affirmations may have affected the participants.

6.1.4.3 *Reflections on the role of the research team*

It is essential to acknowledge the researchers' traces through the research, and the potential effects on the results presented (Malterud, 1996). Transparency about the researchers' pre-existing knowledge provides that kind of acknowledgement and strengthens the study (Malterud, 1996). Therefore, it was important for the research team to distance themselves from their knowledge, experiences, insights and ideas concerning public health nutrition, human rights and other emerging issues that appeared during the data collection.

The PI's knowledge about the school context or food habits of adolescents' in Kampala was limited. Nevertheless, the PI had a bachelor's degree in nutrition and had finished a year in the master's degree in public health nutrition, which provided knowledge about the importance of diet and physical activity on health outcomes, and insights in health promotion and dietary behaviour. This knowledge was accounted for prior to conducting the study. The PI could recognise perceptions, attitudes and behaviours related to these themes among the adolescents. Throughout the research process, the PI actively sought out to prevent early conclusions and keep an open mind to prevent useful information from being lost. The existing knowledge may have increased the preconditions for understanding and interpreting the provided information from the students. However, the adolescents' awareness of the PI's knowledge may have implicated their statements, either through retaining their statement or by increased willingness to share knowledge. The results must be seen in the context of the researcher recognising the existing knowledge and its traces and consider the extent this has impacted the presented results.

6.2 Discussion of the results

This chapter discusses the main results from this study, in relation to The Model of a Changing Food Environment.

6.2.1 *Summary of the results*

The findings of this study indicate that the processes of globalisation, industrialisation and urbanisation in Uganda are causing changes in the food environments and food marketing, and affect adolescents' dietary behaviour and lifestyle. Dietary behaviour of adolescents reflects social affiliation and independence. The social factors of food affected the students' food behaviour, where peer pressure and social acceptance is at its peak. Western food was popular and highly prestigious among the adolescents, especially outside of the home. They described it as popular, fancy, tasty and delicious, and often referred to fast food as snacks. Reasons for purchasing fast food were availability ("It's easily provided"), convenience ("it can easily be prepared"), and social pressure and acceptance

(“You have to come [to school] with just money to buy the junk-food”). On notions on bringing home-packed food, the students said: “I would be embarrassed” and “they’ll start laughing at you”. The duty-bearers confirmed the adolescents’ attraction to fast food and worried about the noticeable upsurge of fast food restaurants, street vendors and the subsequent increase in NCDs. Most of the students perceived that adolescents had experienced a dietary change. The changes were consumption of oily snacks in school breaks and western food in social gatherings. That changes in dietary changes had taken place among adolescents, was supported by the duty-bearers. The noticed food environment changes by the duty-bearers, and the students were increased availability of fast food and advertisement for unhealthy food, which ultimately changed the adolescents’ diets. The overall access to healthy food choices outside of the home was perceived as limited. The students were uncertain about Western food regarding health, due to the production process and ingredients. Food safety was seemingly worrying both adolescents’ and duty-bearers, as expired food and food of low quality existed on the market. Traditional food was described as part of the students’ diets, like school meals and ordinary family dinners, which were enjoyed and perceived as healthy, although its appeal was perhaps somewhat decreasing in social settings. Ultimately, fresh foods from gardens were described as healthy, and oily or sugary food items were perceived as unhealthy. The perceived barriers to achieving a healthy diet were peer pressure, easy access to unhealthy food outside the home and limited nutritional education.

The adolescents had an understanding of their human rights but were unfamiliar with the right to adequate food. Some duty-bearers knew their human rights responsibilities, and others did not position themselves as duty-bearers. The marketing of unhealthy food was acknowledged by some as a human rights issue, which led to suggestions for regulations. The duty-bearers plans to protect and improve the adolescents’ food environment were mainly through education material and policy drafts.

6.2.2 The findings placed in the Changing food environment model

The findings are discussed considering The Model of a Changing Food Environment (Figure 4), objectives and relevant research of this study. The majority of the findings is placed under the “Internal domain” of the model, in particular under “Desirability” and the dynamic between “Availability” and “Accessibility”. Additionally, the duty-bearers perception of “Marketing & information” and their perceived “Human rights responsibilities” under the external domain. The model portrays how adolescents’ food behaviour is affected by the changing external food environment and internal factors.

6.2.2.1 *Desirability and Product properties*

Social significance was attributed to food, and fast food and snacks were perceived as a sign of affluence. When eating out of home, either with friends or in school situations, the students expressed that they expected or wanted to eat fast food. The students acknowledged the social pressure to eat fast food, especially in the school breaks, as it would be embarrassing to eat home-packed lunches supplementary to the provided *posho* at school. Only fast food from street vendors or the canteen was socially accepted. Similar to two studies, from Guatemala and South Africa, sugar-sweetened beverages (SSB) and fast food represented a high social status (Sedibe et al., 2014; World Food Programme, 2018). In Guatemala's rural areas, the adolescents aspired to eat fast food. Moreover, the adolescents had the same reasons for purchasing SSB and fast food, such as availability, convenience, desirability, social pressure and acceptance, also seen in Van Zyl, et al.'s study (Van Zyl, Steyn, & Marais, 2010). The Guatemalan adolescents also discussed the sense of independence and being free from restrictions of their caregivers and influencers when purchasing such food (World Food Programme, 2018).

In many cases, fast food was described as snacks by the adolescents, which can be translated to reasons for eating those food items may be to suppress cravings, not hunger. This characterization was also noticed in a Philippine study, where over 40 per cent of undergraduates referred to fast food as snacks (Matejowsky, 2009). Fast food was probably eaten "on the go", as the adolescents in the present study described it as "prepared" and "portable". The students' fast food consumption was not quantified, but a study from Soweto among adolescents portrayed a intake of 7-16 items weekly (Feeley & Norris, 2014).

In addition to bottled water, the students of the present study preferably drank sodas and juices. Notice, there were no sugar-free options available to the Ugandan population at the time. Uncertainty about proper water-boiling routines led them to forgo cheaper boiled water and freshly made juices. Flavour variations, energy-increment and broad accessibility, made sodas preferable to the adolescents. SSB consumption frequency among the students was not covered; however, among the Soweto adolescents mentioned above, the SSB consumption rate was 8-11 times per week (Feeley & Norris, 2014).

Almost explicitly, the students' preferred foods were Traditional food, and very much in combinations with rice. The dual statement on their preferences, Traditional and Western food, may stem from that they translate "food" to *emere* (starchy porridge); therefore the students may have perceived "food" as *emere* and not food in general, and Western food as snacks. They likely preferred

traditional foods when they were eating “food” at home and Western food when they were eating “snacks” outside of their home. The Ugandan way of eating; dipping *emere* in a relish, is very different from the way of eating Western food. Adhering to their Traditional food, the adolescents preserve their heritage, culture and identity. *Posho* is a part of their traditional dishes, and even though most students did not want *posho* every day, almost all of them liked and preferred it. *Matoke* is a cultural staple food and a part of the identity of Kampala and the Buganda people; a tribe within the largest ethnic group of Uganda (Charles, 2014). People of Buganda serves *matoke* with any meal and believes that a meal without *matoke* is not food (Charles, 2014). Many students expressed that *matoke* was expensive, and it was probably not as accessible nor common as it used to be. *Matoke* can only be harvested from January to June in limited areas, which leads to increased price the rest of the year (Charles, 2014; Pottier, 2015) However, some students said *matoke* was for the elderly, which may imply that prioritising it was more important for the elderly.

Regarding unhealthy food, many adolescents mentioned expired and unsafe foods and juices. In the Uganda Nutrition Policy, under the subject Food storage, Marketing and Distribution, it is stated that it is common to find imported food items that are expired or of low nutritional value (Ministry of Agriculture Animal Industry and Fisheries & Ministry of Health, 2003). The strategy to prevent such food items is to disseminate information and develop a coordinated system for food distribution. Students and duty-bearers mentioned a concern for chemically manufactured foods from China, in particular artificial eggs and plastic rice. Social media and newspapers flourished with information and warnings about artificial foods (New Vision, 2016). Later, the Principal Public Relations Officer from UNBS disclaimed the existence of artificial food (Daily Monitor, 2018). The investigations from the UNBS were conclusive with the results from another study regarding artificial eggs in Bangladesh (Goni Rabba, Faruque, Rakibul Ha, & Ram Sarker, 2019). Ultimately, the massive information in social media and newspapers spread fears and distrust in the quality of available food, even though the information were untrue. Fake news like these can be challenging to detect and potentially have negative impacts on peoples’ lives (Tandoc, Lim, & Ling, 2018).

Otherwise, the adolescents’ perception of unhealthy food and drinks was junk food, food with too much cooking oil or sugar, sodas and energy drinks. Some mentioned that food becomes unhealthy when cooking-oil was added during preparation. They likely perceived the food as healthy if it were prepared without cooking-oil—nevertheless, the adolescents associated themselves with unhealthy food because oily snacks and sodas were tasteful and cheap.

Healthy foods were perceived to be fresh fruits and vegetables, fish, eggs, water, milk and homemade juices. Healthy meals were steamed or boiled, not deep-fried nor pan-fired. Across all groups, a balanced diet was described in the exact same wordings, which makes it likely that they have learned these phrases in school. The adolescents had common knowledge about healthy foods and reasons for eating it. This finding is consistent with Ndahura's study, which indicated that adolescents in Kampala had basic skills to comprehend and follow nutritional messages (Ndahura & Pettersen, 2012). However, they were unlikely to evaluate nutritional claims from media or people and were thus susceptible to be influenced to make poor nutrition choices (Ndahura & Pettersen, 2012). Healthiness meant avoiding diseases to live longer, although not all mentioned diseases were applicable for adolescents, e.g. Kwashiorkor, which was mentioned, is a state of severe undernutrition in children. Most of the participants in the FGDs knew that *posho* contain carbohydrates, beans contain proteins and that fruits and vegetables contain vitamins; although, some of them mixed up the terms.

Traditional food was regarded as food sourced fresh from the garden and was perceived as healthy (apart from some reservations towards fertilizers), similarly described in Sedibe et al.'s study (Sedibe et al., 2014). Traditional food was still a significant part of the adolescents' diets, primarily eaten as their provided school meal or at home. The same phenomena were found in the group of "urban rich" adolescents in a study from the Republic of Cameroon in Central Africa (Dapi, Omoloko, Janlert, Dahlgren, & Håglin, 2007).

Western food was described as imported food, processed food and food the adolescents saw in movies. The perceptions of Westerns foods' healthiness were conflicting. The adolescents claiming it was healthy argued for broader food diversity, while others argued that it depended on the type and frequency of Western food, and some straight-up said it was unhealthy, often due to oil contents. These findings are comparable to another study conducted in adults in South Africa, where nearly half the respondents placed fast food in a healthy lifestyle, while almost 40 per cent disagreed and some believed it depended on the frequency or type of fast food (Van Zyl et al., 2010). Some of the students believed preservatives and additives added nutritional value, but most of the adolescents worried about them. Common for all of them was concerns about the foods production processes, chemicals and potential contaminations. Confusion, misconceptions, contradiction and inconsistency may reveal that they were caught midstream between their traditional values and the modern society, in need of nutritional information and education. Ndahura's findings could explain the adolescents' confusion as the adolescents in his study relied on nutritional information from newspapers, books,

health care providers and family members, which caused variations in nutrition literacy (Ndahura & Pettersen, 2012).

Interestingly, even though a few believed that Western food was healthier than Traditional food, no one mentioned any Western food when asked about healthy food, nor was any Traditional food mentioned when asked about unhealthy food, apart from in the discussion about dangerous food. It could indicate that the students' immediate response to healthy food is Traditional food, and their immediate response to unhealthy food is Western food or fast food.

The girls were concerned about the notions of some food, such as gas caused by beans and ulcers caused by *matoke*, beans, oily foods or sodas. The perception that some food items can cause ulcers may be a misconception due to the experience of abdominal discomfort. Peptic ulcers which can cause abdominal pain, are usually caused by the bacteria *Helicobacter Pylori* and can be treated with antibiotics (NHI, 2018). Except for one student claiming to have ulcers, it is possible others meant abdominal pain or discomfort when referring to ulcers.

Special occasions remain highly ritualised and have associated meals with specific dishes or a specific food. What is being served at these highly symbolic events provides a formal setting in preserving traditions. The fact that Western food (e.g. chicken and fries) and sodas also were savoured for special occasions such as Christmas, Easter, graduations and parties, implies that it has replaced their Traditional meals for these occasions, which takes away from their traditions, culture and identity.

6.2.2.2 *The changing food environment: availability, accessibility, peer influence and marketing*

The adolescents had noticed a change in the food environment; they mentioned the introduction of imported food, an increase in access and availability of unhealthy foods and the increase in food marketing. Their descriptions were supported by the duty-bearers, which emphasised the affordability of and attraction to fast food. Healthy food options were seemingly not available to them outside of the home. However, some stated that they would have chosen a healthier option if it was available to them, as did 78 per cent of the participants of the previously mentioned Van Zyl et al. study (Van Zyl et al., 2010). According to the students in the present study, apples would have been twice the price as one filling *rolex* if they were available nearby the schools, thus not affordable to them. Similarly, inaccessibility of healthy food and easy access to fast food were significant barriers for adolescents to eat healthy in a study in rural South Africa (Sedibe et al., 2014).

Most students believed that adolescents as a group had experienced a change in their diets. Others based their answers on the fact that their family- and school meals remained the same. Moreover,

from the adolescents' preferences and attitudes towards fast food and snacks, one can interpret that most of them had experienced a dietary change. Although not in every aspect of their dietary behaviour as some savoured Western foods merely for holidays. Besides, to some extent, some might have just aspired towards a dietary change. Even though the adolescents enjoyed the dietary diversity the change provided, most of them perceived the dietary change as negative, as it could lead to overweight. Negativity also described the duty-bearers' attitude towards the food environmental and dietary changes. Their concerns were the increase in fast food restaurants, the normalization of fast food and sodas, the change in food preparations and scattered family dinner situations.

The adolescents described being influenced by family and friends. Some mentioned the peer pressure of dieting amongst friends and peers, to have similar body sizes. A systematic review with studies from the US and Australia supports this as school friends were similar in BMI. Fast food consumption, body image concerns, dieting and eating disorders tended to cluster within groups (Fletcher, Bonell, & Sorhaindo, 2011). Similar to most of the adolescents in a study from South Africa, the students in the FGDs expressed that they were happy with their body size (Stupar et al., 2012). Although, they also told that peer pressure affected their body image and eating behaviour. Parents and friends were of most significance concerning dieting behaviour, and especially the girls worried about becoming overweight. An article concluded that having a negative body image resulted in the avoidance of physical activities, eating disorders and dysfunctional exercise (Voelker, Reel, Greenleaf, & Voelker, 2015). Eating disorders were not covered in the present study but was brought up in a few FGDs and by a duty-bearer and served as a reminder. Many of the girls were concerned about their appearance, and particularly acne, which was perceived to be caused by oily food and soda. Their concerns align with a cross-sectional study in Nigeria, where the adolescents perceived that their diet could affect acne; one third believed acne to be caused by eating fatty foods (Yahya, 2009).

Physical activity was perceived as bodybuilding, health preventing and stress revealing. Most of the boys exercised three times a week and up to every day, while the girls only carried out exercise during holidays, due to the feeling of time being wasted or laziness. Interestingly, the girls perceived the walking distance to and from school as exercise, while the boys did not. The exercises mentioned by boys were typical exercises, but many girls mentioned simpler movements, like playing in the compound, skipping and dancing. Globally, 81 per cent of adolescents are insufficiently physically active according to a pooled analysis, and in Uganda, the adolescents' prevalence is 85 per cent (Guthold, Stevens, Riley, & Bull, 2020). However, among the entire Ugandan population, the

prevalence of physical inactivity was among the lowest globally, at 5,5 per cent (Guthold, Stevens, Riley, & Bull, 2018).

Both adolescents and duty-bearers agreed that marketing had increased in the past years and become extensive. The adolescents portrayed several marketing platforms for food and drinks. They said that marketing strategies affected them to buy the listed product and to change their diets. In the previously mentioned study from Van Zyl et al., TV-commercials were reported to be the most effective medium to persuade young South African adults to purchase fast food (Van Zyl et al., 2010). The students did not reflect much over how the advertisement effects made them feel, other than desire, and possibly frustration over not being able to purchase and consume the advertised item. Low reflections may indicate that they are unaware of the long-term marketing intention. A systematic review accounted for the significant effects of food marketing to children, where exposure impacted children's attitudes, preferences and consumption of unhealthy food, with potentially detrimental health consequences (Smith, Kelly, Yeatman, & Boyland, 2019).

6.2.2.3 Human rights understanding and responsibility

The adolescents exhibited a basic understanding of human rights as they knew several rights and processes of violations. The human rights they knew, were likely rights that were important to them, such as the right to freedom, a name and education, and most importantly, that the rights can not be taken away. Many described human rights as determining for what a person is allowed to do or not, and that a person should not deprive others of their rights. Their emphasis on not violating each other's rights indicate that they were unaware that only state-actors are responsible for upholding human rights for rights-holders. None of the adolescents was familiar with the right to adequate food but managed to make reasonable suggestions, e.g. the right to eat what you want could translate to have acceptable food, and the right to get satisfied aligns with having sufficient food.

Overall, there was a broad agreement among the duty-bearers that food is a human rights issue, although not every duty-bearer positioned themselves in human rights obligations and responsibilities. Some of the duty-bearers in this study perceived or became aware that the marketing of unhealthy food is a human rights infringement. Uganda has no restrictions on advertising unhealthy food and drinks to children. A few of the duty-bearers caught an interest in the topic and hopefully planned to look into it. WHO has developed recommendations on the marketing of foods and non-alcoholic beverages to children where they positioned the government as stakeholders in policy development, implementation, monitoring (WHO, 2010). Additionally, in the more recent

recommendations, WHO aims to promote healthy food and beverages to children and reduce marketing of unhealthy foods, regardless of whether it is targeted at children or adults (WHO, 2016b).

In order for rights-holder to claim their rights, first, they need to be aware of their human rights, then secondly, that they have the right to hold relevant duty-bearers accountable. At times when the rights-holders lack the capacity to act, duty-bearers have the responsibility to improve their capacity. The adolescents lacked access and availability of nutritious foods in the school premises and nutritional knowledge about Western food; additionally, the excessive marketing of food interfered with healthy eating behaviour. Due to the unsatisfactory food environment and nutritional knowledge among the adolescents, the State must raise awareness of the right to adequate food, and the duty-bearers must understand their obligations to fulfil the right.

6.2.2.4 *Measures, policies and regulations*

Duty-bearers pointed out weak laws and poor implementations of food safety standards, which allowed mislabelled or unlabelled food items and products of poor quality to enter the market. Consumers have the right to information in order to make healthy dietary decisions and trust that the products they consume are safe. Thus far, nutritional education at household levels, nutritional booklets and TV-programmes were the measures put in place to protect and improve the adolescents' food environments. However, it is hard to determine how effective these measures are and if the adolescents were reached. In the Ministry of Health, draft guidelines and programmes were developed to safeguard the health of adolescents', although the implementation strategy will be essential for its success.

Uganda has an existing adopted policy on food and nutrition, including goals, specific objectives and strategies on several relevant issues. Amongst them is create awareness and mobilise communities for better nutrition, promote optimal nutritional in institutions; to prevent, control and disseminate information on chronic nutrition-related NCDs and to ensure the priority of children, adolescents, mothers and the elderly's health care (Ministry of Agriculture Animal Industry and Fisheries & Ministry of Health, 2003). Although policies and improvements are a continuous process, these goals may be too general. A second edition of the policy is, however, being drafted.

Most of the duty-bearers measures appeared to be based on education, which is an important aspect as it seemed that adolescents lacked some critical judgment concerning nutrition. However, research shows that structural measures on limiting the marketing of unhealthy foods and drinks, front-of-pack labelling, price control and access to healthy food in canteens are required (Gorski & Roberto, 2015). WHO has identified evidence-based, cost-effective "best buy" interventions that are

feasible and appropriate to implement within the constraints of local low and middle-income countries health systems to address NCDs (WHO, 2017). Best buy is developed in line with the HRBA utilizing the available resources to implement the most effective measures and have, amongst others, a set of recommended interventions on unhealthy diets.

6.2.2.5 *Discussion of the model and considerations*

The utilization of the developed model suited its' purpose and provided a foundation for analysing causes of the dietary changes. It connected the external and internal food environments to the dietary changes. The changing food environment led to changes in consumption for the adolescents. Health outcomes were not studied in this project, but the anticipated changes to increased intake of fast food, SSBs and snacks are expected to contribute to increased overweight, obesity and cardiovascular diseases (Popkin, 2006).

Prioritising the right to adequate food is challenging in Uganda due to poverty, malnutrition, food insecurity, unemployment, inadequate sanitation, unstable access to electricity and low educational levels (World Bank, 2016). Nevertheless, overweight and obesity must be taken into account as the prevalence is increasing, and the consequences are known. It is noticed that the acknowledgement of food marketing as a human rights infringement is relatively new due to the multi-factorial consequences that manifest themselves over a longer period of time (Eide, Torheim, Løvhaug, & Eide, 2017; UNSCN, 2017). Most governments and companies have not yet taken the initial step of identifying unhealthy food marketing as a salient human rights issue, much less developed concrete measures to address the exposure.

Some of the adolescents' dietary changes derive from independence and the increased responsibilities of growing up. Adolescents are a demanding group but should not be ignored as they are classified as a vulnerable group. In-depth understanding of their own behaviour may not be fully developed, but GC No. 12 highlights the importance of the child's participation aspect (CESCR, 1999). It provides children with the possibility to express their views, knowing their opinions will contribute to shaping the desired outcome. The students' insights into the changing food environment can be useful for future interventions.

7 Concluding remarks

This study connected the changing food environment with the human right to adequate food for adolescent students in Kampala. Both adolescent students' and selected duty-bearers' perspectives of the changing food environment and human rights were explored through focus group discussions and interviews, respectively. However, the changing food environment in Kampala is complex because of different socio-economical levels, ethnic groups and beliefs. Poverty and undernutrition are still Uganda's primary concern, but overweight, obesity and non-communicable diseases also pose a significant health threat to the country.

The lack of access and availability of healthy foods for adolescent outside the home was the emerging concern of the study. Duty-bearers and rights-holders acknowledged that the changing food environment had caused a change in the adolescents' food preferences, dietary patterns and social norms of dietary pattern. Duty-bearers have a shared responsibility and the authority to act on the right to adequate food and facilitating healthy foods environments under the standards of GC No. 12, but limited capacity hindered satisfactory implementations.

The human rights and principles have guidelines on implementation, evaluation and monitoring, which can be used to counteract the changing dietary behaviour. The implementation of Uganda's pending bills, policies and regulations on health and nutrition may facilitate better health for adolescents. To accommodate health promoting behaviour in Kampala, the utilization of their cultural values can be used by promote and preserve the perceptions and values of Traditional food. Furthermore, the governmental sector should improve adolescents' food environments, both within and outside of the school premises. The development and implementation of national guidelines for healthy school meals, with requirements for variation, and availability and access to healthy food choices in and around the school premises, could protect the right to adequate food. A coordinated effort between the government, food industry and marketing industry is required to encourage health-promoting behaviour and improve the distribution of nutritional information. The final suggestion is to develop and implement regulations of the marketing of unhealthy food and drinks, to restrain NCDs and comorbidities and possibly decrease the desirability of unhealthy foods.

In conclusion, these findings indicate that changing food environments affect adolescents' dietary behaviour. National guidelines on healthy school meals and school food environments, regulation of marketing of unhealthy foods and nutritional education may increase access to healthy foods, knowledge and awareness for the adolescents to make healthy food choices. The changing food environments are likely to progress in Uganda, causing an increased upsurge in non-

communicable diseases. Therefore, in efforts to constrain the development, there is a need for further research on adolescents' rationales for social food behaviour and food environments to ensure the health of adolescents.

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Appendices

Appendix 1 Focus group discussion guide

Marion Brodin
Hauchs gate 6B
0175, Oslo, Norway
Tel: +47 997 86 318
Ugandan tel: 078 6567522
E-mail s170361@oslomet.no

Focus group discussion guide

[Quick introduction and a brief description of the study.]

Perceptions of food and beverages

1. What snack do you as youths prefer?
 - a. Why do you think that is?
2. What food do you as youths prefer?
 - a. Why do you think that is?
3. What do you as youths prefer to drink?
 - a. Why do you think that is?
4. Do you think your favourite food and drinks is the same as the general youth's population in Kampala?
 - a. What is the most popular food to eat among youths?
 - b. Can you think of reasons why this is so popular?
5. What is the most popular drink?
 - a. Can you think of reasons why this is so popular?
6. What food is the most expensive?
 - a. Why is this food expensive?
 - b. Who eats this food?
 - c. Why do you/they eat this?
 - d. Is this food healthy?

Perceptions of health

1. What do you youths think makes you healthy?
2. How do diets (what you eat and drink) affect health?
 - a. How come you think like this? (Experience, education, from someone, other)
3. What do you as youths associate with healthy food?
 - a. Why do you think this food is healthy?
 - b. Who eats this food and why?
4. What do youths associate with unhealthy food?
 - a. Why do you think this is food unhealthy?
 - b. Who eats this food and why?
5. What is a balanced diet?
 - a. Why is it important to have a balanced diet?

6. What do you think could be barriers to achieve better health for you as youths?

Perceptions of body image

1. What do you think a body should look like?
 - a. Please explain why.
 - b. How do you achieve that kind of body?
 - c. Is it common to look like that?
2. What is your view of a healthy body image? Please explain.
3. What do you think about exercise?
 - a. Do you exercise?
 - b. How often? Is it common?
 - c. What do you do and for how long?

Dietary changes

1. Have youths experienced a change in their diet in the past five years (since reaching the age of youth/ having your own money)?
 - a. What has changed?
 - b. Can you think of reasons why this has happened?
2. Who are the youths that have changed their diets?
3. What used to be eaten that is not eaten now?
 - a. Why is that?
4. What do you eat now that you did not eat before?
 - a. Why is that?
5. What is a traditional diet to you as youths? Elaborate.
 - a. Do you as youths think a traditional diet is healthy?
 - b. Why do you think that is?
 - c. Do you as youths eat traditional food?
 - d. Why do you eat Traditional foods? If no, who eats this, and why do they eat it?
 - e. When, how often?
6. What does a western diet mean to you as youths? Elaborate.
 - a. Do you as youths think a western diet is healthy?
 - b. Why do you think that is?
 - c. Do you as youths eat Western foods?
 - d. Why do you eat Western foods? If no, who eats this, and why do they eat it?
 - e. When, how often?
7. Do you think this change positive or negative?

Food environments: access and availability of food and drinks (home, school, activities)

1. What is the most common to eat with friends?
 - a. Why do you think that is?
2. Do you think that the shops provide healthy food choices, how?
 - a. Has this changed in any direction?
 - b. Explain why you think that.
3. Do you, as youths sometimes experience barriers to eat healthily?

- a. What are these barriers?
4. Do you think you as youths would have chosen to eat something different if there were more options available in shops/ canteens?
 - a. What would you like to buy?
5. Does the school focus on healthy food, drinks and exercise?

Advertisement for food and drinks

1. Do you as youths experience that you are affected by what others eat? (Friends, famous persons)
 - a. Please elaborate on why you think so.
2. Have you recognized any advertisement for food and drinks on your way to school?
 - a. Do you remember any products or brands?
 - b. Do you take these products?
 - c. Have you experienced that you get affected by advertisements?
 - d. How does it affect you?
 - e. How do you feel about that?
 - f. Do you think you as youths are less or more exposed to advertisement now, than the previous generation?
 - g. Please explain why.

Human rights

1. In your own words, what are Human Rights, in general?
2. Do you know any rights?
3. Are they useful to you?
4. Why do we have rights?
5. What do you think it means to have the right to enough and sufficient food?
6. What can you do if your rights are violated?

[Wrap up key points and thank students for participating and sharing insights.]

Appendix 2 Interview guide to relevant authorities

Marion Brodin
Hauchs gate 6B
0175, Oslo, Norway
Tel: +47 997 86 318
Ugandan tel: 078 6567522
E-mail s170361@oslomet.no

Interview guide

Questions for qualitative interviews with selected persons working in the area of food and health of adolescent students:

[Introduction: briefly describe the purpose of the study.]

1. Introductory questions: What is your area of work and responsibility, etc.
2. Have you noticed any change in the availability of different foods in Kampala? In what direction – more or less healthy?
3. What about marketing – do you see an increase in the marketing of unhealthy foods and drinks?
 - a. If the person notices a changing food environment, what impact does he/she believe this may have on adolescents' dietary intake and health status?
4. What do you perceive to be the most important barriers to a healthy dietary pattern for adolescents'?
5. Has your institution established any measures to address unhealthy dietary patterns of adolescents? If yes, please describe.
6. Do you have any relevant future visions and plans for this group?
7. Do you think that increased availability of unhealthy food, increased marketing of unhealthy food and increased nutrition-related problems are related to human rights? Could you describe how you view the responsibility of your institution related human rights of adolescents?

[Thank the participants for their time and insights.]

Appendix 3 Information letter to the invited schools

Marion Brodin
Hauchs gate 6B
0175, Oslo, Norway
Tel: +47 997 86 318
Ugandan tel: 078 6567522
E-mail s170361@oslomet.no

Are you interested in taking part in the research project;
**“Perceptions of the changing food environments and the
right to adequate food for adolescent students in Kampala,
Uganda”?**

To whom it may concern,

My name is Marion Brodin, and I am the researcher and a student from OsloMet – Oslo Metropolitan University in Norway, Europe. As a part of my master’s degree, I am conducting a study on food perceptions and the right to adequate food among adolescent students in Kampala, Uganda. My master thesis is done in collaboration with Kyambogo University Department of Human Nutrition and Home Economics.

In accordance with the Norwegian legal requirements, the study has received research clearance from OsloMet – Oslo Metropolitan University and ethical approval from the Norwegian Centre for Research Data (NSD). In accordance to the Ugandan legal requirements, the study has received ethical clearance from the research ethics committee of Makerere University School of Social Sciences Research and Ethics Committee (MAKSS REC) and the Uganda National Council for Science and Technology (UNCST). In addition to this, the research is permitted by the District Education Officer of Kampala Capital City Authority (KCCA). The study is self-funded by the researcher herself, except for the application fee for the MAKSS REC ethical clearance which is funded by OsloMet – Oslo Metropolitan University.

This is an inquiry about participation in a research project where the main purpose is to explore adolescents’ perspective on food, diets and body image. In this letter, we will give you information about the purpose of the project and what your school’s participation will involve.

Purpose of the project

This study is a master’s thesis of a degree in public health nutrition at OsloMet – Oslo Metropolitan University in Norway, Europe. The purpose of this study is to describe adolescents’ perceptions of food, dietary changes, body image, the changing food environment and food marketing, using a human rights perspective.

In addition, this study will also contact health and food authorities for interviews about their perceptions of the changing food environment and future plans to protect and improve food environments.

The information gathered in this study will not be used for other purposes than described above.

Who is responsible for the research project?

OsloMet – Oslo Metropolitan University is the institution responsible for the project.

Why are you being asked to participate?

The target group of this study is male and female adolescent in Kampala, aged 15-17. Information will be collected at four different schools, by purposive sampling with the help of a local expert where schools from different geographical and socio-demographic areas will be selected, two in Kampala Central Division and two in Kawempe Division.

What does participation mean for your school?

This project involves students participating in a focus group discussion about adolescents' perceptions of food, diets and body image. The focus groups will be gender divided, containing 6 participants from your school. It will take approximately 1 ½ hour. I will take audio-records of the interview, write notes and take a few photos of our session, not including faces.

If you chose to participate in the project, please sign the permission form and provide the information needed to establish contact. Then we can settle on what is the best time and place for conducting the focus group discussions, and how to hand out and collect the information letters and consent forms from the students.

Compensation

There will be no compensation given to the invited schools; however, I will provide some fresh fruit and a bottle of water for 3000 UGX for the participants.

Participation is voluntary

Participation in the project is voluntary. If your school chooses to participate, you can withdraw your consent at any time without giving a reason. All information will be anonymous. There will be no negative consequences for you if you choose not to participate or later decide to withdraw.

Your personal privacy – storage and usage of your personal data

Your personal data will only be used for the purposes specified in this information letter. The personal data will be processed confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

The researcher (Marion Brodin), supervisor (Liv Elin Torheim) and co-supervisor (Sigrun Henjum) all from OsloMet – Oslo Metropolitan University, will have access to your personal data. In addition to co-supervisor and collaborator (Dr. Peter Milton Rukundo Associate Professor) from Kyambogo University in Kampala, Uganda.

The consent letters with names and a list of contact details will be stored separately from the rest of the collected data. I do not need this information in the study. I will store the collected data on a research server, encrypted and locked away to ensure that no unauthorized persons are able to access the personal data.

Participants will not be recognizable in publications, as all data will be anonymised. The publications will contain some of the group's statements, which will be generalized, to give insight to the readers.

What will happen to your personal data at the end of the research project?

The project is scheduled to end 20.06.19. The personal data, including any digital audio recordings, will at the end of the project, be destroyed and deleted.

Your rights

So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

What gives us the right to process your personal data?

We will process the personal data based on given consent.

Based on an agreement with OsloMet – Oslo Metropolitan University, NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Information sharing/ dissemination

You can find my results from the study online at OsloMet – Oslo Metropolitan University; in addition, I will also send you the results when I am finished with my thesis in June 2019.

If you have questions about the project or want to exercise your rights, contact:

- OsloMet – Oslo Metropolitan University via the researcher Marion Brodin s170361@oslomet.no or supervisor Liv Elin Torheim livtor@oslomet.no or co-supervisor Sigrun Henjum shenjum@oslomet.no.
- Our Data Protection Officer: Ingrid Jacobsen at OsloMet – Oslo Metropolitan University
- NSD – The Norwegian Centre for Research Data AS, by email (personvernombudet@nsd.no) or by telephone: +47 55 58 21 17.

The researcher: Marion Brodin

Signature of the researcher: _____

Date: _____

Appendix 4 Permission form to conduct research at school

Permission form for conducting research at school

Permission form for conducting the research study: “Perceptions of the changing food environment and the right to adequate food for adolescent in Kampala, Uganda” at the invited school.

The aim is to recruit 12 students from each of the four schools, that will form two gender divided focus groups, with 6 participants, which will result in eight focus group discussions with 48 students in total. Qualitative semi-structured interviews will also be conducted with eight selected duty-bearers. The number of research participants in this study is 56 individuals in total.

Name of the school: _____

Your position at the school: _____

By signing your name below, you give Marion Brodin and her assistants the permission to carry out the following research during September or October 2018. *(Please tick the box if you are permitting)*

- one 1 hour focus group discussion just after school
- access to the official class list
- access to the official school fee

What gives us the right to process your personal data?

We will process the personal data based on given consent. Data material on a personal computer will be secured with a password at all times, and data in physical form will be stored in locked cabinets in a secure room with a lock and key.

Thank you so much for your interest.

Name of school employee: _____

Signed by school employee: _____

Date: _____

Name of the researcher: Marion Brodin

Signature of the researcher: _____

Date: _____

Please provide your contact information to be provided with the results:

(School employee, e.g. telephone number or e-mail address)

Appendix 5 Information letter to students and parents/ caregiver

Marion Brodin
Hauchs gate 6B
0175, Oslo, Norway
Tel: +47 997 86 318
Ugandan tel: 078 6567522
E-mail s170361@oslomet.no

Information letter to students and parents/ caregiver:

Are you interested in taking part in the research project;

“Perceptions of the changing food environments and the right to adequate food for adolescent students in Kampala, Uganda”?

Dear student and parent or caregiver,

My name is Marion Brodin, and I am the researcher and a student from OsloMet – Oslo Metropolitan University in Norway, Europe. As a part of my master’s degree, I am conducting a study on food perceptions and the right to adequate food among adolescent students in Kampala, Uganda.

In accordance with the Norwegian legal requirements, the study has received research clearance from OsloMet – Oslo Metropolitan University and ethical approval from the Norwegian Centre for Research Data (NSD). In accordance to the Ugandan legal requirements, the study has received ethical clearance from the research ethics committee of Makerere University School of Social Sciences Research and Ethics Committee (MAKSS REC) and is permitted by the District Education Officer of Kampala Capital City Authority (KCCA). The study is self-funded by the researcher herself, except for the application fee for the MAKSS REC ethical clearance which is funded by OsloMet – Oslo Metropolitan University.

This is an inquiry about participation in a research project where the main purpose is to explore adolescents’ perspective on food, diets and body image. In this letter, we will give you information about the purpose of the project and what your participation will involve.

Purpose of the project

This study is a master’s thesis of a degree in public health nutrition at OsloMet – Oslo Metropolitan University in Norway, Europe. The purpose of this study is to describe adolescents’ perceptions of food, dietary changes, body image, the changing food environment and food marketing, using a human rights perspective. The aim is to recruit 12 students from each of the four schools, that will form two gender divided focus groups, with six participants, resulting in eight focus group discussions with 48 students in total.

In addition, this study will also contact health and food authorities for interviews about their perceptions of the changing food environment and future plans to protect and improve food environments. Qualitative semi-structured interviews will be conducted with eight selected

key nutrition focal officers (duty-bearers), which results in a total of 56 participants of the entire study.

The information gathered in this study will not be used for other purposes than described above.

Who is responsible for the research project?

OsloMet – Oslo Metropolitan University is the institution responsible for the project.

Why are you being asked to participate?

The target group of this study is male and female adolescent in Kampala, aged 15-17. Information will be collected at four different schools, by purposive sampling with the help of a local expert where schools from different geographical and socio-demographic areas will be selected, two in Kampala Central Division and two in Kawempe Division.

What does participation involve for you?

If you chose to participate in the project, this would involve that you as a student will take part in a focus group discussion where we will talk about adolescents' perceptions of food, diets and body image. The focus groups will be gender divided, including six participants from your school. A local assistant, fluent in both English and Luganda, will help during the discussions, encouraging free speech and conversations. It will take approximately 1 hour. The session will take place after school hours at your school. I will take audio-recordings of the session, write notes and take a few photos of our session, not including faces or other person recognizable features.

Parents/guardians may on request see the interview guide in advance, contact me at s170361@oslomet.no.

Compensation

There will be no compensation given to the participants; however, I will provide some fresh fruit and a bottle of water for 3000 UGX.

Participation is voluntary

Participation in the project is voluntary. If you choose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you choose not to participate or later decide to withdraw. The relationship with your school/teacher will not be affected by what you say in the focus group discussion.

Your personal privacy – how we will store and use your personal data

We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

The researcher (Marion Brodin), supervisor (Liv Elin Torheim) and co-supervisor (Sigrun Henjum) all from OsloMet – Oslo Metropolitan University, will have access to your personal data. In addition to a collaborator (Dr. Peter Milton Rukundo Associate Professor) from Kyambogo University in Kampala, Uganda.

The consent letters with names and a list of contact details will be stored separately from the rest of the collected data. I do not need this information in the study. I will store the collected

data on a research server, encrypted and locked away to ensure that no unauthorized persons are able to access the personal data.

Participants will not be recognizable in publications, as all data will be anonymised. The publications will contain some of the group's statements, which will be generalized, to give insight to the readers.

What will happen to your personal data at the end of the research project?

The project is scheduled to end 20.06.19. Your personal data, including any digital audio recordings, will at the end of the project, be destroyed and deleted.

Your rights

So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

What gives us the right to process your personal data?

We will process your personal data based on your consent. Data material on a personal computer will be secured with a password at all times, and data in physical form will be stored in locked cabinets in a secure room with a lock and key.

Based on an agreement with OsloMet – Oslo Metropolitan University, NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Information sharing/ dissemination

You can find my results from the study online at OsloMet – Oslo Metropolitan University, in addition, I will also send your school the results by e-mail for you to be provided with when I am finished with my thesis in June 2019.

If you have questions about the project or want to exercise your rights, contact:

- OsloMet – Oslo Metropolitan University via the researcher Marion Brodin s170361@oslomet.no or supervisor Liv Elin Torheim livtor@oslomet.no or co-supervisor Sigrun Henjum shenjum@oslomet.no.
- Our Data Protection Officer: Ingrid Jacobsen at OsloMet – Oslo Metropolitan University
- NSD – The Norwegian Centre for Research Data AS, by email (personvernombudet@nsd.no) or by telephone: +47 55 58 21 17.
- The Chair - Dr. Stella Neema, Makerere School of Social Sciences, Research Ethics Committee, by E-mail sheisim@yahoo.com or by telephone +256 772 457576
- The Executive Secretary, The Uganda National Council of Science and Technology, by E-mail infor@uncst.go.ug or by telephone +256 414 705500

The researcher: Marion Brodin

Signature of the researcher: _____

Date: _____

Appendix 6 Informed consent form, parents

Informed consent form for parents - FGD**Title of Research and study**

“Perceptions of the changing food environments and the right to adequate food for adolescent students in Kampala, Uganda.” The aim is to recruit 12 students from each of the four schools, that will form two gender divided focus groups, with 6 participants, which results in eight focus group discussions with 48 students in total. Qualitative semi-structured interviews will also be conducted with eight selected duty-bearers. The number of research participants in this study is 56 individuals in total.

Name of researcher and institution

Marion Maxine Andersen Brodin from OsloMet – Oslo Metropolitan University, Norway

Conditions of consent and Consent

I have received and understood information about the project and have been given the opportunity to ask questions. I understand that I am free to withdraw from the study at any time. I hereby give consent for my child to participate in this study under the following conditions: *(Please tick the boxes you give consent to)*

- I consent for my child to participate in focus group discussion
- I consent for my child to being audio recorded
- I consent for my child to non-identifiable pictures being taken
- I consent for my child’s personal data to be processed until the end date of the project, approx. 20.06.19

The commitment of the Principal Investigator

I, Marion Maxine Andersen Brodin, promise to comply with the described procedures in the information letter and consent form. I assure you that the participant has been given sufficient time to read and understand the information letter and consent form and has been given the opportunity to ask questions and receive correct answers about the study. I confirm that consent to the participation of this study has been given voluntarily. The participant is provided with a copy of this consent form.

What gives us the right to process your personal data?

We will process the personal data based on given consent. Data material on a personal computer will be secured with a password at all times, and data in physical form will be stored in locked cabinets in a secure room with a lock and key.

Do not hesitate to contact me for any inquiries; I will gladly help you.

Researcher, Marion Maxine Andersen Brodin
OsloMet – Oslo Metropolitan University, Norway
Telephone +47 99786318/ +256 786567522
E-mail s170361@oslomet.no

If you would like to talk to someone other than the researcher(s) about; (1) concerns regarding this study, (2) research participant rights, (3) research-related injuries, or (4) other human subjects’ issues, please contact:

Dr. Stella Neema
The Chair
Makerere School of Social Sciences
Research Ethics Committee
Telephone +256 772 457576
E-mail sheisim@yahoo.com

And,

The Executive Secretary
The Uganda National Council of Science and Technology,
Kimera Road, Ntinda P. O. Box 6884 Kampala, Uganda
Telephone +256 414 705500
Fax +256 141 234579
E-mail infor@uncst.go.ug

Thank you so much for your interest.

Name of parent/ caregiver: _____

Signed by parent/ caregiver: _____

Date: _____

Name of the researcher: Marion Brodin _____

Signature of the researcher: _____

Date: _____

Name of witness in case participant is illiterate: _____

Signature of witness: _____

Appendix 7 Assent form, students

Informed assent form for students- FGD

OsloMet – Oslo Metropolitan University, Norway. Marion Brodin Tel: +47 997 86 318/ +256 78 6567522

INFORMED ASSENT DOCUMENT

Perceptions of the changing food environments and the right to adequate food for adolescent students in Kampala, Uganda

Participating in this study is completely voluntary. Please read about the study below. Feel free to ask questions about anything that you do not understand before deciding if you want to be in the study. A researcher listed below will be around to answer your questions.

WHY ARE YOU HERE?

The researchers want to tell you about a research study looking at adolescents' general thoughts about their food, body image, food advertising and human rights. They want to see if you would like to be in this study. The aim is to recruit 12 students from each of the four schools, that will form two gender divided focus groups, with 6 participants, resulting in eight focus group discussions with 48 students in total. Qualitative semi-structured interviews will also be conducted with eight selected duty-bearers, which results in a total of 56 participants of the entire study.

WHY ARE THEY DOING THIS STUDY?

Marion Brodin, the responsible investigator and her assistant Lynnth Turyagyenda, are doing this study to learn more about adolescents' perceptions of food and their view on the changing food environments. In addition to that, the study will explore the perceptions of the people responsible for adolescents' health.

WHAT WILL HAPPEN TO YOU?

These things will happen if you want to be in the study:

1. Participate in a group discussion
2. Being audio recorded
3. Pictures (without faces) being taken
4. Personal data will be stored until the end date of the project, approx. 20.06.19

WILL THE STUDY HURT?

No, this study will not hurt or include any risks for the ones involved. If you feel uncomfortable, you can choose to withdraw. There will be no negative consequences for you if you choose not to participate or later decide to withdraw. The relationship with your school/teacher will not be affected by what you say in the group discussion.

WILL YOU GET BETTER IF YOU ARE IN THE STUDY?

There will be no compensation given to the participants; however, I will provide some fresh fruit and a bottle of water for 3000 UGX. This study will also help others understand your situation better, and hopefully, society will benefit from the results afterwards.

WHAT GIVES US THE RIGHT TO PROCESS YOUR PERSONAL DATA?

We will process the personal data based on given consent. Data material on a personal computer will be secured with a password at all times, and data in physical form will be stored in locked cabinets in a secure room with a lock and key.

WHAT IF YOU HAVE ANY QUESTIONS?

You can ask questions at any time. You can ask now, or you can ask later. You can talk to the researchers, your mom and dad, or you can talk to someone else. If you have any additional questions, concerns or complaints about the study, you may contact the researchers Marion Brodin at telephone number: +47 997 86 318/ +256 78 6567522.

If the researchers cannot be reached, or if you would like to talk to someone other than the researcher(s) about; (1) questions, concerns or complaints, (2) your rights, (3) research-related injuries, or (4) other issues, please contact:

The Chair, Makerere School of Social Sciences Research Ethics Committee. Telephone: +256- 772 457576, E-mail: sheisim@yahoo.com

And,

The Executive Secretary, The Uganda National Council of Science and Technology, Kimera Road. Ntinda P. O. Box 6884 Kampala, Uganda, Telephone: (256) 414 705500, Fax: +256-414-234579, Email: info@uncst.go.ug

DO YOU HAVE TO BE IN THE STUDY?

You do not have to be in the study. No one will be mad at you if you don't want to do this. If you don't want to be in this study, you just have to tell the researchers. You can say yes now and change your mind later. It is up to you to decide.

Thank you so much for your interest.

Name of participant: _____ Age: _____

Signed by participant _____ Date: _____

I am a: Boy Girl

Name of the researcher: Marion Brodin _____

Signature of the researcher: _____ Date: _____

Name of witness in case participant is illiterate: _____

Signature of witness: _____

Appendix 8 Evaluation form of the fieldwork, students

Evaluation of the fieldwork for the study “Perceptions of the changing food environments and the right to adequate food for adolescent students in Kampala, Uganda”

What was it like for you to be in the group?

Were the questions asked understandable?

Could you talk without restraint? If not, what was it that you could not ask about?

Is there anything we missed asking about in relation to youths, food and human rights?

What was good and what was not so good?

What can we do differently?

Thank you so much for your insights, time and effort.

Best regards, Marion Brodin (the researcher) and the research team

Appendix 9 Information letter to relevant authorities

Marion Brodin
Hauchs gate 6B
0175, Oslo, Norway
Tel: +47 997 86 318
Ugandan tel: 078 6567522
E-mail s170361@oslomet.no

Information letter to duty-bearers

Are you interested in taking part in the research project;

“Perceptions of the changing food environments and the right to adequate food for adolescent students in Kampala, Uganda”?

Dear participant,

My name is Marion Brodin, and I am the researcher and a student from OsloMet – Oslo Metropolitan University in Norway, Europe. As a part of my master’s degree, I am conducting a study on food perceptions and the right to adequate food among adolescent students in Kampala, Uganda.

In accordance with the Norwegian legal requirements, the study has received research clearance from OsloMet – Oslo Metropolitan University and ethical approval from the Norwegian Centre for Research Data (NSD). In accordance to the Ugandan legal requirements, the study has received ethical clearance from the research ethics committee of Makerere University School of Social Sciences Research and Ethics Committee (MAKSS REC) and is permitted by the District Education Officer of Kampala Capital City Authority (KCCA). The study is self-funded by the researcher herself, except for the application fee for the MAKSS REC ethical clearance which is funded by OsloMet – Oslo Metropolitan University.

This is an inquiry about participation in a research project where the main purpose is to explore the school and health authorities’ perceptions of the changing food environments and food marketing. In this letter, we will give you information about the purpose of the project and what your participation will involve.

Purpose of the project

This study is the master’s thesis of a degree in public health nutrition at OsloMet – Oslo Metropolitan University. The purpose of this study is to explore the school and health authorities’ perceptions of the changing food environments, food marketing, responsibilities and planned actions for protecting and improving adolescents’ food environment, using a human rights perspective. The aim is to recruit eight selected key nutrition focal officers (duty-bearers).

In addition to interviews with authorities, this study’s main source of information will be through eight focus group discussions in groups of six students. A total of in 48 students will describe adolescents’ perceptions of food, dietary changes, body image, the changing food

environment and food marketing, using a human rights perspective. Combined, a total of 56 participants will be included in the study.

The information gathered in this study will not be used for other purposes than described above.

Who is responsible for the research project?

OsloMet – Oslo Metropolitan University is the institution responsible for the project.

Why are you being asked to participate?

The target group for this part of the study is food, school and health authorities with the purpose to figure as duty-bearers. The sample has been selected through purposive sampling with the help of a local expert.

What does participation involve for you?

If you choose to participate in the project, this will involve that you take part in an interview. It will take approx. 20 minutes. The interview includes questions about the changing food environments, food marketing, and planned measures to improve adolescents' unhealthy dietary patterns. Your answers will be audio-recorded, and I will write notes during the interview.

Compensation

There will be no compensation given to the participants; however, I will provide a bottle of water for 1000 UGX if requested.

Participation is voluntary

Participation in the project is voluntary. If you choose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you choose not to participate or later decide to withdraw.

Your personal privacy – storage and usage of your personal data

Your personal data will only be used for the purposes specified in this information letter. The personal data will be processed confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

The researcher (Marion Brodin), supervisor (Liv Elin Torheim) and co-supervisor (Sigrun Henjum) all from OsloMet – Oslo Metropolitan University, will have access to your personal data. In addition to a collaborator (Dr. Peter Milton Rukundo Associate Professor) from Kyambogo University in Kampala, Uganda.

The consent letters with names and a list of contact details will be stored separately from the rest of the collected data. I do not need this information in the study. I will store the collected data on a research server, encrypted and locked away to ensure that no unauthorized persons are able to access the personal data.

Participants will not be recognizable in publications, as all data will be anonymised. The publications will contain some of the statements made in the interview, but it will be generalized, to give insight to the readers.

What will happen to your personal data at the end of the research project?

The project is scheduled to end 20.06.19. Your personal data, including any digital recordings, will at the end of the project, be destroyed and deleted.

Your rights

So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

What gives us the right to process your personal data?

We will process your personal data based on your consent. Data material on a personal computer will be secured with a password at all times, and data in physical form will be stored in locked cabinets in a secure room with a lock and key.

Based on an agreement with OsloMet – Oslo Metropolitan University, NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Information sharing/ dissemination

You can find my results from the study online at OsloMet – Oslo Metropolitan University, in addition, I will also send you the results by e-mail when I am finished with my thesis in June 2019.

If you have questions about the project or want to exercise your rights, contact:

- OsloMet – Oslo Metropolitan University via the researcher Marion Brodin s170361@oslomet.no or supervisor Liv Elin Torheim livtor@oslomet.no or co-supervisor Sigrun Henjum shenjum@oslomet.no.
- Our Data Protection Officer: Ingrid Jacobsen at OsloMet – Oslo Metropolitan University
- NSD – The Norwegian Centre for Research Data AS, by email (personvernombudet@nsd.no) or by telephone: +47 55 58 21 17.
- The Chair - Dr. Stella Neema, Makerere School of Social Sciences, Research Ethics Committee, by E-mail sheisim@yahoo.com or by telephone +256 772 457576
- The Executive Secretary, The Uganda National Council of Science and Technology, by E-mail infor@uncst.go.ug or by telephone +256 414 705500

The researcher: Marion Brodin

Signature of the researcher: _____

Date: _____

Appendix 10 Informed consent form to authorities

Informed consent form for duty-bearers**Title of Research and study**

“Perceptions of the changing food environment and the right to adequate food for adolescent students in Kampala, Uganda.” The aim is to recruit eight selected key nutrition focal officers (duty-bearers). In addition to interviews with authorities, this study’s main source of information will be through in eight focus group discussions in groups of six students, which results in 48 students describing adolescents’ perceptions of food. The number of research participants in this study is 56 individuals in total.

Conditions of consent

I have received and understood information about the project and have been given the opportunity to ask questions. I understand that I am free to withdraw from the study at any time. I hereby give consent to participate in this study under the following conditions: *(Please tick the boxes you give consent to)*

- I consent to participate in an interview
- I consent to be audio recorded
- I consent for my personal data to be processed until the end date of the project, approx. 20.06.19

The commitment of the Principal Investigator

I, Marion Maxine Andersen Brodin, promise to comply with the described procedures in the information letter and consent form. I assure you that the participant has been given sufficient time to read and understand the information letter and consent form and has been given the opportunity to ask questions and receive correct answers about the study. I confirm that consent to the participation of this study has been given voluntarily. The participant is provided with a copy of this consent form.

What gives us the right to process your personal data?

We will process the personal data based on given consent. Data material on a personal computer will be secured with a password at all times, and data in physical form will be stored in locked cabinets in a secure room with a lock and key.

Do not hesitate to contact me for any inquiries; I will gladly help you.

Researcher, Marion Maxine Andersen Brodin
OsloMet – Oslo Metropolitan University, Norway
Telephone +47 99786318/ +256 786567522
E-mail s170361@oslomet.no

If you would like to talk to someone other than the researcher(s) about; (1) concerns regarding this study, (2) research participant rights, (3) research-related injuries, or (4) other human subjects’ issues, please contact:

Dr. Stella Neema
The Chair
Makerere School of Social Sciences
Research Ethics Committee
Telephone +256 772 457576

E-mail sheisim@yahoo.com

And,

The Executive Secretary
The Uganda National Council of Science and Technology,
Kimera Road, Ntinda P. O. Box 6884 Kampala, Uganda
Telephone +256 414 705500
Fax +256 141 234579
E-mail infor@uncst.go.ug

And,

Belinda Gloppen Helle
The Norwegian Centre for Research Data AS - NSD
Telephone: +47 55 58 21 17.
E-mail personvernombudet@nsd.no

Thank you so much for your interest.

Name of participant: _____

Signed by participant _____ Date: _____

Name of the researcher: Marion Brodin _____

Signature of the researcher: _____ Date: _____

Name of witness in case participant is illiterate: _____

Signature of witness: _____

Please provide your contact information: *(Participants e.g. telephone number or e-mail address)*

Appendix 11 Learning agreement for studying abroad from OsloMet

**LEARNING AGREEMENT FOR FIELD WORK
ABROAD**



Name of student: Marion Maxine Andersen Brodin

Date of birth: 19.06.1991

Academic semester/year abroad (e.g. Fall 2018): Fall 2018

Field of study (e.g. 3-year Bachelor Programme in): Master programme in Public Health Nutrition

Details of the proposed study programme abroad:

Receiving institution: Kyambogo University

Country: Uganda

Dates (from-to): September 1st to October 31st

Short description of the programme/ field work

The aim of the study is to identify how nutrition transition in Uganda affects dietary behaviour of adolescents as rights holders, to detect their dietary perceptions and to describe how environments affect their dietary behaviour. Further to explore existing measures providing healthy food environments from a duty bearers perspective.

Student's signature:

Marion Brodin Date: 28.06.18

OSLO METROPOLITAN UNIVERSITY CONFIRMS:

We hereby confirm that the proposed programme of study will be approved as an integral part of the student's degree programme at Oslo Metropolitan University.

Departmental coordinator's signature:

Asgeir Brevik Date: 28.06.2018

Appendix 12 Norwegian ethical clearance approved by NSD

NSD Personvern

20.09.2018 08:13

Det innsendte meldeskjemaet med referansekode 937767 er nå vurdert av NSD.

Følgende vurdering er gitt:

Det er vår vurdering at behandlingen vil være i samsvar med personvernlovgivningen, så fremt den gjennomføres i tråd med det som er dokumentert i meldeskjemaet 20.09.2018 med vedlegg, samt i meldingsdialogen mellom innmelder og NSD. Behandlingen kan starte.

MELD ENDRINGER

Dersom behandlingen av personopplysninger endrer seg, kan det være nødvendig å melde dette til NSD ved å oppdatere meldeskjemaet. På våre nettsider informerer vi om hvilke endringer som må meldes. Vent på svar før endringen gjennomføres.

TYPE OPPLYSNINGER OG VARIGHET

Prosjektet vil behandle særlige kategorier av personopplysninger frem til 20.06.2019

LOVLIG GRUNNLAG

Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Vår vurdering er at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 nr. 11 og art. 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse, som kan dokumenteres, og som den registrerte kan trekke tilbake.

Lovlig grunnlag for behandlingen vil dermed være den registrertes uttrykkelige samtykke, jf. personvernforordningen art. 6 nr. 1 a), jf. art. 9 nr. 2 bokstav a, jf. personopplysningsloven § 10, jf. § 9 (2).

PERSONVERNPRINSIPPER

NSD finner at den planlagte behandlingen av personopplysninger vil følge prinsippene i personvernforordningen:

- om lovlighet, rettferdighet og åpenhet (art. 5.1 a), ved at de registrerte får tilfredsstillende informasjon om og samtykker til behandlingen
- formålsbegrensning (art. 5.1 b), ved at personopplysninger samles inn for spesifikke, uttrykkelig angitte og berettigede formål, og ikke viderebehandles til nye uforenlige formål
- dataminimering (art. 5.1 c), ved at det kun behandles opplysninger som er adekvate, relevante og nødvendige for formålet med prosjektet
- lagringsbegrensning (art. 5.1 e), ved at personopplysningene ikke lagres lengre enn nødvendig for å oppfylle formålet

DE REGISTRERTES RETTIGHETER

De registrerte vil ha følgende rettigheter i prosjektet: åpenhet (art. 12), informasjon (art. 13), innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18), underretning (art. 19) og dataportabilitet (art. 20). Rettighetene etter art. 15–20 gjelder så lenge den registrerte er mulig å identifisere i datamaterialet.

NSD vurderer at informasjonen som de registrerte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13. Vi minner om at hvis en registrert tar kontakt om sine rettigheter, har behandlingsansvarlig institusjon plikt til å svare innen en måned.

FØLG DIN INSTITUSJONS RETNINGSLINJER

NSD legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1. f) og sikkerhet (art. 32). For å forsikre dere om at kravene oppfylles, må prosjektansvarlig følge interne retningslinjer/rådføre dere med behandlingsansvarlig institusjon.

OPPFØLGING AV PROSJEKTET

NSD vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til med prosjektet!

Kontaktperson hos NSD: Belinda Gloppen Helle
Tlf. Personverntjenester: 55 58 21 17 (tast 1)

Norwegian Centre for Research Data (NSD) Privacy

20.09.2018 08:13

The submitted application form with reference code 937767 is now reviewed by NSD.

The following review is given:

It is our assessment that the processing will be in accordance with the privacy legislation, provided that it is conducted in accordance with what is documented in the 20 September 2018 report form with attachments, as well as in the dialogue between the registrar and NSD. The processing can start.

NOTIFY CHANGES

If the processing of personal data changes, it may be necessary to report this to NSD by updating the form. On our website we inform you about the changes that need to be reported. Wait for a response before the change is completed.

TYPE OF INFORMATION AND DURATION

The project will process special categories of personal data until 20.06.2019

LEGAL BASIS

The project will obtain the consent of the registered person for processing personal data. Our review is that the project offers a consent in accordance with the requirements of Art. 4 No. 11 and Art. 7, because it is a voluntary, specific, informed and unambiguous confirmation that can be documented and which the registered person can withdraw.

Legal basis for processing will thus be the explicit consent of the registrant, cf. the Privacy Policy. 6 No. 1 a), cf. Art. 9 No. 2 letter a, cf. section 10 of the Personal Information Act, cf. Section 9 (2).

PRIVACY POLICIES

NSD finds that the planned processing of personal data will follow the principles of the Privacy Regulation:

- on legality, justice and openness (Article 5.1a), as the data subjects receive satisfactory information and consent to the processing
- Objective Limitation (Article 5.1b), by collecting personal information for specific, expressly stated and legitimate purposes, and not further processing for new incompatible purposes

- data minimization (Article 5.1 c), by processing only information that is adequate, relevant and necessary for the purpose of the project
- Storage limitation (Article 5.1 e), because personal information is not stored longer than necessary to fulfil the purpose

THE REGISTRATED RIGHTS

The registrants will have the following rights in the project: openness (Article 12), information (Article 13), access (Article 15), correction (Article 16), deletion (Article 17), limitation (Article 18), notification (Article 19) and data portability (Article 20). Rights by species. 15-20 apply as long as the registrant is possible to identify in the data material.

NSD considers that the information that they will receive complies with the law's requirements for form and content, cf. Art. 12.1 and Art. 13. We remind that if a registered person makes contact about his / her rights, the institution responsible for processing has a duty to reply within one month.

FOLLOW YOUR INSTITUTION'S GUIDELINES

NSD assumes that the processing meets the requirements of the privacy regulation on accuracy (Article 5.1 d), integrity and confidentiality (Article 5.1 f) and security (Article 32). To ensure that the requirements are fulfilled, the project manager must follow internal guidelines / consult with the processing institution.

FOLLOW-UP OF THE PROJECT

NSD will follow up on scheduled completion to clarify whether the processing of personal data has been completed.

Good luck with the project!

Contact person at NSD: Belinda Gloppen Helle

Tel. Privacy Services: (+47) 55 58 21 17 (Key 1)

Appendix 13 Permission to conduct research in Kampala KCCA



Appendix 14 Ethical clearance study approval granted by MAKSS REC

MAKEREREP. O. Box 7062,
Kampala, Uganda
Cables: MAKUNIKA**UNIVERSITY**Tel: 256-41-545040/0712 207926
Fax: 256-41-530185
E-mail: makssrec@gmail.com

**COLLEGE OF HUMANITIES AND SOCIAL SCIENCES
SCHOOL OF SOCIAL SCIENCES
RESEARCH ETHICS COMMITTEE**

Your Ref:

Our Ref: MAKSS REC 10.18.225

19th November 2018

Marion Maxine Andersen Brodin
Principal Investigator (MAKSS REC 10.18.225)
Telephone contact: +256 786 567522/ + 47 997 86 318
Email: s170361@oslomet.no

Dear Madam,

Initial – Full Board

Re: Approval of Protocol titled: “Nutrition transition and right to adequate food for adolescent students in Kampala Uganda”

This is to inform you that, the Makerere University School of Social Sciences Research Ethics Committee (MAKSS REC) granted approval to the above referenced study. The MAKSS REC reviewed the proposal using the full board review on **18th October 2018**. This has been done in line with the investigator’s subsequent letter addressing comments and suggestions.

Your study protocol number with MAKSS REC is **MAKSS REC 10.18.225**. Please be sure to reference this number in any correspondence with MAKSS REC. Note that, the initial approval date for your proposal by **MAKSS REC was 18th October 2018**. This is an annual approval and therefore; approval expires on **17th October 2019**. **Please note that, final approval should be done by Uganda National for Science and Technology. You should use stamped consent forms and study tools/instruments while executing your field activities at all times.** However, continued approval is conditional upon your compliance with the following requirements.

Continued Review

In order to continue on this study (including data analysis) beyond the expiration date, Makerere University School of Social Sciences (MAKSS REC) must re-approve the protocol after conducting a substantive meaningful, continuing review. This means that you must submit a continuing report Form as a request for continuing review. To avoid a lapse, you should submit the request six (6) to eight (8) weeks before the lapse date. Please use the forms supplied by our office.



Please also note the following:

- No other consent form(s), questionnaires and or advertisement documents should be used. The Consent form(s) must be signed by each subject prior to initiation of my protocol procedures. In addition, each research participant should be given a copy of the signed consent form.

Amendments

During the approval period, if you propose any changes to the protocol such as its funding source, recruiting materials or consent documents, you must seek Makerere University School of Social Sciences Research and Ethics Committee (MAKSS REC) for approval before implementing it.

Please summarise the proposed change and the rationale for it in a letter to the Makerere University School of Social Sciences Research and Ethics Committee. In addition, submit three (3) copies of an updated version of your original protocol application- one showing all proposed changes in bold or "track changes" and the other without bold or track changes.

Reporting

Among other events which must be reported in writing to the Makerere University School of Social Sciences Research and Ethics Committee include:

- i. Suspension or termination of the protocol by you or the grantor.
- ii. Unexpected problems involving risk to participants or others.
- iii. Adverse events, including unanticipated or anticipated but severe physical harm to participants.

Do not hesitate to contact us if you have any questions. Thank you for your cooperation and commitment to the protection of human subjects in research.

The legal requirement in Uganda is that, all research activities must be registered with the National Council for Science and Technology. The forms for this registration can be obtained from their website www.unsct.go.ug

Please contact the Administrator of Makerere University School of Social Sciences Research and Ethics Committee at makssrec@gmail.com OR bjulied@yahoo.co.uk or telephone number +256 712 207926 if you counter any problem.

Yours sincerely,



Dr. Stella Neema
Chairperson
Makerere University School of Social Sciences Research and Ethics Committee



c.c.: The Executive Secretary, Uganda National Council for Science and Technology

Appendix 15 Protocol approval by the national council UNCST



Uganda National Council for Science and Technology

(Established by Act of Parliament of the Republic of Uganda)

Our Ref: SS 4891

30th September 2019

Ms. Marion Maxine Andersen Brodin
Principal Investigator
C/o Kyambogo University
Kampala

Dear Ms. Brodin,

Re: Research Approval: Nutrition Transition and the Right to Adequate Food for Adolescent Students in Kampala, Uganda

I am pleased to inform you that on **08/08/2019**, the Uganda National Council for Science and Technology (UNCST) approved the above referenced research project. The Approval of the research project is for the period of **08/08/2019** to **08/08/2020**.

Your research registration number with the UNCST is **SS 4891**. Please, cite this number in all your future correspondences with UNCST in respect of the above research project.

As Principal Investigator of the research project, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and addenda to the research protocol or the consent form (where applicable) must be submitted to the designated Research Ethics Committee (REC) or Lead Agency for re-review and approval **prior** to the activation of the changes. UNCST must be notified of the approved changes within five working days.
3. For clinical trials, all serious adverse events must be reported promptly to the designated local IRC for review with copies to the National Drug Authority.
4. Unanticipated problems involving risks to research subjects/participants or other must be reported promptly to the UNCST. New information that becomes available which could change the risk/benefit ratio must be submitted promptly for UNCST notification after review by the REC.
5. Only approved study procedures are to be implemented. The UNCST may conduct impromptu audits of all study records.

LOCATION/CORRESPONDENCE

Plot 6 Kimera Road, Ntinda
P. O. Box 6884
KAMPALA, UGANDA

COMMUNICATION

TEL: (256) 414 705500
FAX: (256) 414-234579
EMAIL: info@uncst.go.ug
WEBSITE: <http://www.uncst.go.ug>



Uganda National Council for Science and Technology

(Established by Act of Parliament of the Republic of Uganda)

6. An annual progress report and approval letter of continuation from the REC must be submitted electronically to UNCST. Failure to do so may result in termination of the research project.

Below is a list of documents approved with this application:

	Document Title	Language	Version	Version Date
1.	Research proposal	English	2.0	November 2018
2.	Interview guide for duty bearers	English	2.0	November 2018
3.	Informed Consent Forms	English	2.0	November 2018
4.	Focus group discussion guide for students			
5.	Information letters	English	2.0	November 2018
6.	Informed assent form for students – FGD	English	2.0	November 2018

Yours sincerely,

Isaac Makhuwa

For: Executive Secretary

UGANDA NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Copied to: Chair, Makerere University School of Social Sciences, Research Ethics Committee

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