



UNIVERSITY *of*
RWANDA

**PERCEIVED DETERMINANTS OF FOOD CHOICES AMONG
PREGNANT WOMEN AND LACTATING MOTHERS WITH THEIR
UNDER TWO YEARS CHILDREN IN THREE DISTRICTS OF RWANDA:
A QUALITATIVE STUDY**

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This dissertation is presented as part of the fulfilment of requirements for the degree of Masters in Public Health, University of Rwanda, College of medicine and Health Sciences, School of Public Health

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Kigali, October 2019

DECLARATION

I declare that this dissertation contains my own work and has not been presented to any other institution.

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DEDICATION

I dedicate this work to the Almighty God in whose vindication lies my success.

To my Husband and Children; **Janvier TWAGIRIMANA**, **Keyla J.U. AKALIZA** and **Kendrick G. KWIZERA**, for the precious love, care, patience, encouragement, and priceless support.

This particularly goes to my lovely Husband for his Love, encouragement, and commitment support, through school morally and materially.

To my Father and the extended family, each and every one who helped me, in so many different ways, to accomplish this work.

I dedicate this work.

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ABSTRACT

Background: Maternal and child nutrition during pregnancy and lactation has been associated with healthy outcomes for both mother and child. This study explored the factors influencing food choices and nutritional practices of pregnant women and lactating mothers with their children below two years in rural areas of Rwanda.

Methods: A qualitative approach was used in the six sectors from three districts of Rwanda, where, 24 focus group discussions (FGDs), with and 12 Key Informant interviews (KIIs) were conducted in August 2019. FGDs included pregnant women, lactating mothers, grandmothers, community health workers (CHWs), and role model parents, men, and KIIs with nutrition officers in health centers and hospitals, local leaders and CRS-Gikuriro program implementing partners. A thematic analysis of content was performed using Atlas ti, version 7.5.18 to analyze all qualitative data, and all data were gathered around key themes of the study.

Results: The theme “Perceived reasons of food choices among pregnant women, lactating mothers with their under two years’ children”; included mothers’ experiences in the battle of eating a balanced diet, existing support and barriers met day by day, trying to make good food choices for them, their children and the whole family in general. Positive perceptions on benefits from eating balanced diet have been identified, but many barriers are limiting the ability to put in practice the what they have learnt from various interventions; such as poverty and lack of husband’s support, time pressure and nature of daily jobs, husband and wife conflicts, climate change and food insecurity, lack of clean drinking water, societal and religious beliefs in making food taboos, ...

Conclusion: Intensified nutritional education was identified as a key measure for improving nutritional practices of women during pregnancy, lactation and for their under two years’ children. Special programs which stimulate husband support should be organized in order to increase men’s knowledge of adequate maternal and child nutrition intake during that particular period also improve both parent’s collaboration with supportive care which would positively affect the productivity and development of the family as well as mother and child nutritional health.

Keywords: Food choices, Pregnant and Lactating mothers, Under two years’ children, rural areas, Rwanda

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ACCRONYMS AND ABBREVIATIONS

ASM	: Agent de Santé Maternelle
CHW	: Community Health Worker
CRS	: Catholic Relief Services
DHS	: Demographic and Health Survey
EDPRS	: Economic Development and Poverty Reduction Strategy
FGD	: Focus Group Discussion
FAO	: Food and Agriculture Organization
IYCF	: Infant and Young Child Feeding
KII	: Key Informant Interview
MDG	: Millennium development goal
MOH	: Ministry of Health
MINEMA	: Ministry in charge of Emergency Management
MINALOC	: Ministry of Local Government
PBC	: Planned Behavior Control
RBC	: Rwanda Biomedical Center
RDHS	: Rwanda Demographic and Health Survey
SDGs	: Sustainable development goals
SNV	: (Netherlands Development Organization)
TPB	: Theory of Planned Behavior
UNICEF	: United Nations Children Fund
USAID	: United States Agency for International Development
WHO	: World Health Organization

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I. Definition and Key Concepts

i.1 Malnutrition

Malnutrition is defined as a condition referring to deficiencies, excesses or imbalances in a person's intake of energy and/or nutrients (2,3).

i.2 Balanced diet

A balanced diet is considered as a diet that contains an adequate quantity of the nutrients that a person require in a day, which includes; Fats, Protein, Carbohydrates, Fiber, Vitamins, and Minerals therefore helping the body to grow, develop and stay healthy (4).

i.3 Undernutrition

Undernutrition; is known as a condition that stems from the inadequate quantity and/or quality of food being consumed, and/or repeated infection or disease resulting in improper absorption of vital nutrients. It manifests itself through wasting, stunting, and micronutrient deficiencies (3).

i.4 Wasting

Wasting or (Acute malnutrition): is a condition where a child's weight is too low for his/her height, and his/her body wastes away. It is associated with a high risk of mortality in young children.

i.5 Stunting

Stunting; known as a sign of chronic malnutrition): is a condition where a child's height is too low for his/her age as a consequence of long-term nutritional deprivation. It is associated with long-term developmental and health risks (3).

i.6 Micronutrient deficiencies

Micronutrient deficiencies; also known as a "Hidden Hunger"; is the direct outcome of inadequate intake of vital vitamins and minerals, which results in sub-optimal immune function while undermining growth and development (3).

i.7. Food choice

Food choice is defined as; ‘the selection of foods for consumption, which results from the competing, reinforcing and interacting influences of a variety of factors. These range from the sensory, physiological and psychological responses of individual consumers to the interactions between social, environmental and economic influences, and include the variety of foods available and the activities of the food industry to promote them’ (5).

i.8 Food habit

Food habit refers to the way in which people take different decisions about; what type of food to cook, serve and eat depending on what is available to them. Thus, it is a multidisciplinary measure about eating certain food at a regular basis, and this matches with diet and food disorders (1,2).

CHAPTER 1. INTRODUCTION

1.1 Background

Building good and healthy communities is of great importance. Thus, maintaining equity in health remains crucial when fighting against preventable imbalance between individuals. Health inequality in the community implies inequitable differences in health status, which is avoidable through genuine actions (6).

Nutritional health disparities affect health by hindering the growth and development of young generations as well as their families. Helpful interventions are needed while addressing social inequalities in nutrition, without forgetting policies addressing health and nutrition. Easing the access to affordable nutritious foods in good quality and quantity; in addition to the improvement of living environment at the individual and population level, is among priorities (7).

By reducing health inequalities aiming to not leave anyone behind, various institutions can implement strategies designed for good governance. Therefore, the increase of evidence generation on health disproportions particularly in nutritional aspect, is needed to inform decision making, for a good design and implementation of public health nutrition policies throughout data dissemination, planning and programming for diverse nutrition interventions.

Assessing and fighting against nutritional disparities and the associated factors is helping to achieve the 2025 Global aims which targets to improve motherly, and child nourishment (6,8). In that context, among the priorities of 2030 Agenda for Sustainable Development; its' number one target is 40% reduction in the prevalence of stunted children who are below 5 years old (7,8).

Stunting is known for a child who has a little height compared to his or her age. Its shocking results derive from poor nutrition in-utero and continue with affecting early childhood. The exposed children are at a high risk of suffering from irreparable physical and intellectual damages that go along with undersized growing. Besides, overwhelming effects of stunting are known to last a lifetime, with the possibilities of affecting the following generation.

Globally, in 2018, around 151 million children below 5 years (22.9%) were stunted (9), where around 36% of the world's stunted children live sub-Saharan Africa (10). It is known to occur in

the first 1,000 days after conception where the attributable factors are including but not limited to, economic status, food intake, infections, and nutritional status of mothers, communicable diseases, and micronutrient deficits as well as living settings (8).

This very affected childhood period, is the one when a most important growth spurt happens, and that requires macro and micronutrients in sufficient ways. This golden age period of 1-3 years is branded by fast brain development. Unfortunately, a large number of kids become undersized due to consumption of low nutritious food plus recurrent illnesses due to unsafe environments during that period (3).

Research done in 2016 showed 87 million children who were stunted, recorded in Asia, 59 million in Africa and 6 million in the Latin American and Caribbeans; with (31.4%) representing the stunting rate in western Africa, (32.5%) in middle Africa, (36.7%) in eastern Africa and (34.1%) in southern Asia. Countries have put extraordinary effort in reducing child stunting, however progress has not been equal in all groups of populations with the decline in prevalence of child stunting more pronounced in cities than in countryside (8).

Stunting may be developed in uterus, thus, malnourished women when get pregnant, may fall in that risk of giving birth to low birth weight and stunted babies. Furthermore, if those babies are ineffectively breastfed are subjected to be attacked by numerous communicable illnesses due to deprived nourishment and unhealthy food. Children's diet determines their growth where after 6 months (with exclusive breastfeeding), children requires acceptable and nontoxic sources of micro and macronutrients. Consequently, socio-economic status, secured food resources, uncontaminated water and access to main health care services will play an important role to the reduction of stunting prevalence, which is a risk factor for increased mortality, weakened cognitive abilities, motor development and weakened biological functions (8).

Rwanda has put serious effort into reducing stunting among children under 5 years. It's large percentage (about 80%) of inhabitants is found in countryside and that's where the probability of finding stunted children is high, where they may suffer irreversible brain damage, impeding them from reaching their complete developmental potential. They are recognized by a shorter average adult height and are at higher vulnerability to chronic diseases in adulthood with lower attained schooling that results in a reduced adult income (11).

Among the main influencing factors of stunting there is; education level, revenue, type of job at the individual level. That can also be influenced by place of residence or country development. Financial and education level has been impacting nutrition, where parents with lower education are more expected to have children with stunted growth as they are less able to obtain specific information about child stunting (8,6).

Considering that it is a multifaceted problem, there is no single nutrition intervention to address stunting, but rather multiple, complex and coordinated nutrition-sensitive and nutrition-specific interventions in collaboration with other health and non-health actors in development.

Rwandan good governance put considerable effort putting human wellbeing at the center of development through decentralization, providing evidence to guide policy formulation, involving decision-making around human development, because there is a palpable connection between a country's economic growth and human development. However, regarding current high population growth and the fact that the population is mostly rural and agriculture-dependent also raises concerns, as this could weaken advances in human development in many different ways (3).

In the battle of refining children's nutrition, interdisciplinary approach, effective and sustained multi-sectoral nutrition programs are needed over the long term, thus, regular data collection is critical to monitoring and analyses are crucial at country, regional and global level progress towards a brighter future (5).

It is argued that efforts to decrease infant and child deaths have to prioritize, micronutrient rich diets for pregnant women, lactating mothers, infants and children, considering anemia problem as menace to maternal and child health. Therefore, Rwanda launched a national multi-sectoral plan to eradicate undernourishment by addressing micronutrient deficits (6).

Rwanda has put much efforts towards meeting the most of its development goals, however, chronic malnutrition, or stunting, remains a major challenge. Consequently, various strategies which have been adopted pushed the stunting rates to decline gradually since 2000 and changes at an accelerated pace since 2010 but they remain stubbornly high at 38% (2014-2015). While stunting is widespread, the report notes that rates are highest among the poorest households and those living in rural areas, with modest improvements in stunting since 2005. The average annual rate of

reduction for 2005–15 was 2% among the poorest wealth quintile, in contrast to 5% in the richest quintile (7).

Rwanda's government has placed stunting high on its priority list, to be addressed under the Sustainable Development Goals (SDG), and is taking measures to turn the tide on stunting by involving key stakeholders. Food security, nutrition and early childhood development are prioritized as foundational issues in the National Strategy for Transformation and Prosperity (2017-2024), and the government has set a bold target for all districts to reduce it to 19% stunting rate by 2024 (13).

The occurrence of stunting is a vital indicator to evaluate a country's progress towards United Nations 'Sustainable Development Goal two (9). Increasing progress towards reducing the prevalence of stunting necessitates a more advanced understanding of the factors that contribute to early linear growth faltering. Environmental factors such as household food insecurity and poor quality water and sanitation; maternal factors such as short stature, poor nutrition and health during pregnancy; care-giving factors, such as infrequent feeding and low dietary diversity; and child factors such as being born preterm, small for gestational age and childhood diarrhea incidence are considered among key determinants of stunting. Furthermore, evidence shows that diverse socio-economic and demographic characteristics including age and sex of the child, residence, parental level of education, family size, household wealth index; cultural and traditional beliefs related factors including traditions, cultural beliefs, dietary taboos, maternal perception on child nutrition; co-morbidity and health care accessibility and utilization characteristics influence maternal and child nutritional outcomes (15).

Malnutrition is one of the key public health concerns in Rwanda too. The recent DHS data showed that 38 percent of children under age 5 are stunted of which 14 percent were severely stunted. Stunting increases with the age of the child, rising from 18 percent among children age 6-8 months to a peak of 49 percent among children age 18-23 months before gradually declining to 37 percent among children age 48-59 months. Moreover, nine percent of children under age 5 are underweight whereas 2 percent experienced wasting. Similarly, 7 percent of women were reported as underweight with BMI below 18.5(17). However, it's worth noting that Rwanda made remarkable improvements in the nutritional status of children over the past decade. The percentage of stunted children fell from 51 percent in 2005 to 44 percent in 2010 and 38 percent in 2014-15 whereas the

proportion of children who are underweight declined from 18 percent in 2005 to 9% in 2014-15. These improvements can be attributed to the high level political commitment, multi-sectoral coordination efforts, and aggressive interventions of comprehensive nutrition programs by the government and development partners (17).

It is in that context that CRS GIKURIRO - Rwanda Program has taken the initiative to improve the nutritional status of women of reproductive age and children under five, emphasizing the first 1,000 days of life between pregnancy/lactation period and two years of age, in five districts of intervention, (Kayonza, Ngoma, Nyabihu, Kicukiro, and Nyarugenge), which were chosen among eight while the remaining three (Rwamagana, Ruhango and Nyanza) are being supported by other USAID partners, and this is done in line with reinforcing the Government's efforts towards its national goal of eliminating malnutrition, through targeted behavior change communication (BCC), actions for nutrition and water, sanitation and hygiene (WASH), and through strengthening the capacity of governmental and civil society organizations to implement the designed strategies through regular monitoring and research so that timely and evidence from the conducted interventions can lead to good decisions taking and recommendations to finally be put in actions for sustainable development of our country, aimed at having healthy and wealthy population.

Based on the CRS's work in the selected districts; their interventions are to increase access to quality services while supporting good nutrition for families, including support for lactating mothers, children growth monitoring, teaching on good food preparation and storage, management of chronic diseases, with engaging the community, helping them to feel more responsible of their children's nutrition, lactating mothers and pregnant women with also improving household nutrition practices through active social and behavior change communications approaches to support family members and engage them in finest health nutrition, encouraging exclusive breastfeeding and feeding bowls (7).

Theory of Planned Behavior (TPB) concepts; [attitude, subjective-norm, perceived-behavioral-control (PBC)] with other psychosocial variables (perceived stress, health value and self-identity as a healthy eater) are valuable while elucidating difference in mother's 1) intentions to eat a healthy diet during pregnancy and 2) food eating behavior (e.g. adherence to food group recommendations) during pregnancy.

1.2 Problem Statement

As, a systematic review by Kavle and Landry revealed; food intake during pregnancy and lactation is mostly driven by personal preferences and cravings, food avoidance, food taboos, social norms and cultural beliefs surrounding pregnancy physiology, of course without forgetting socio-economic status of the households (1). It is crucial also to shed the light on all hidden factors influencing feeding during that particular period without forgetting those affecting dietary diversity of their children from 6 to 23 months. Thus, it is of a great importance to know each and every cause, as long as they all together worsen the risks by exposing them to some irreversible outcomes due to inadequate nutrition (8).

As shown by research; some pregnant women and lactating mothers recognize the importance of higher recommended intake of “vitamins” and quality of diet (e.g., consuming vegetables, fruits, meat, fish, eggs, and milk) as important during pregnancy, yet this knowledge is not always translated into practice, mainly due to the financial capacity of the household, cultural norms and belief around diet during pregnancy (19).

Stunted children represents the worst form of malnutrition as they experience irreversible retardation of physical and cognitive development; therefore, they are further predisposed to infections and highly susceptible to chronic diseases (10).

Evidence shows that undernutrition is attributed to half of all under five children deaths worldwide (10)., where, low level of economic status among the households is known as a major contributor to high stunting rates in Rwanda, in addition to; mothers with no education, inadequate crop yields, poor health seeking nutritional behaviors among pregnant and lactating mothers and for children below two years (11). The government of Rwanda recognizes under nutrition and stunting as a development impediment, where it represents 38% of child stunting the reason why it is putting in place efforts to tackle it with implementing different strategies to fight child hunger and malnutrition, putting in place the District Plans to Eliminate Malnutrition (DPEM) in every district (9).

Government efforts are put in place, trying to eliminate undernourishment, with the help of targeted behavior change communication (BCC), actions for nutrition and water, sanitation and hygiene (WASH), supporting families with small livestock and giving “Shisha Kibondo” to children, village kitchen for improving practices with food preparation, creating “Kitchen gardens”, put them in cooperatives, train them about good choices for balanced diet, have been re-inforced by CRS Gikuriro initiative aimed at improving the feeding status of women at the reproductive age with their under-five children, where particular attention is put on the first 1,000 days of life between pregnancy/lactating period and children with less than two years. As known, the existing active participation of the governmental and civil society organizations is implementing the designed strategies, through regular monitoring and research so that timely and evidence from the conducted interventions can lead to good decisions taking and recommendations to finally be put in actions for sustainable development of our country, aiming to have healthy and wealthy population.

It is unfortunate to see that the stunting rate is still high in Rwanda (38%), particularly in rural areas, where it is far beyond the national rate; around (40% - 59%), so far, Nyabihu district had the highest stunting rate (59%), Kayonza district; (42%) and 17% in Kicukiro District. Being geographically separated; their residents might be facing barriers in very different ways. Therefore, a systematic assessment was needed to deeply understand, the perceived determinants affecting food choices during pregnancy, lactation, and early childhood, considering that the decreasing rate of child malnutrition remains unacceptably low (3).

1.3 Study Objectives

The study aimed to assess the perceived reasons of food choices among pregnant women and lactating mothers with their under two years' children in three districts of Rwanda, using a qualitative approach. Specifically, it sought:

- To explore the drivers of food habit for pregnant women and lactating mothers, with their under 2 years' children.
- To explore types of approved and disapproved food by some community's influential groups for pregnant mothers, during lactation and for children below two years of age.
- To explore current personal belief on dietary diversity during pregnancy, lactation and for children, less than 2 years old.

1.3.1 Conceptual Framework

The below figure; illustrating logical paths, thinking on eating a healthy diet during pregnancy& lactation.

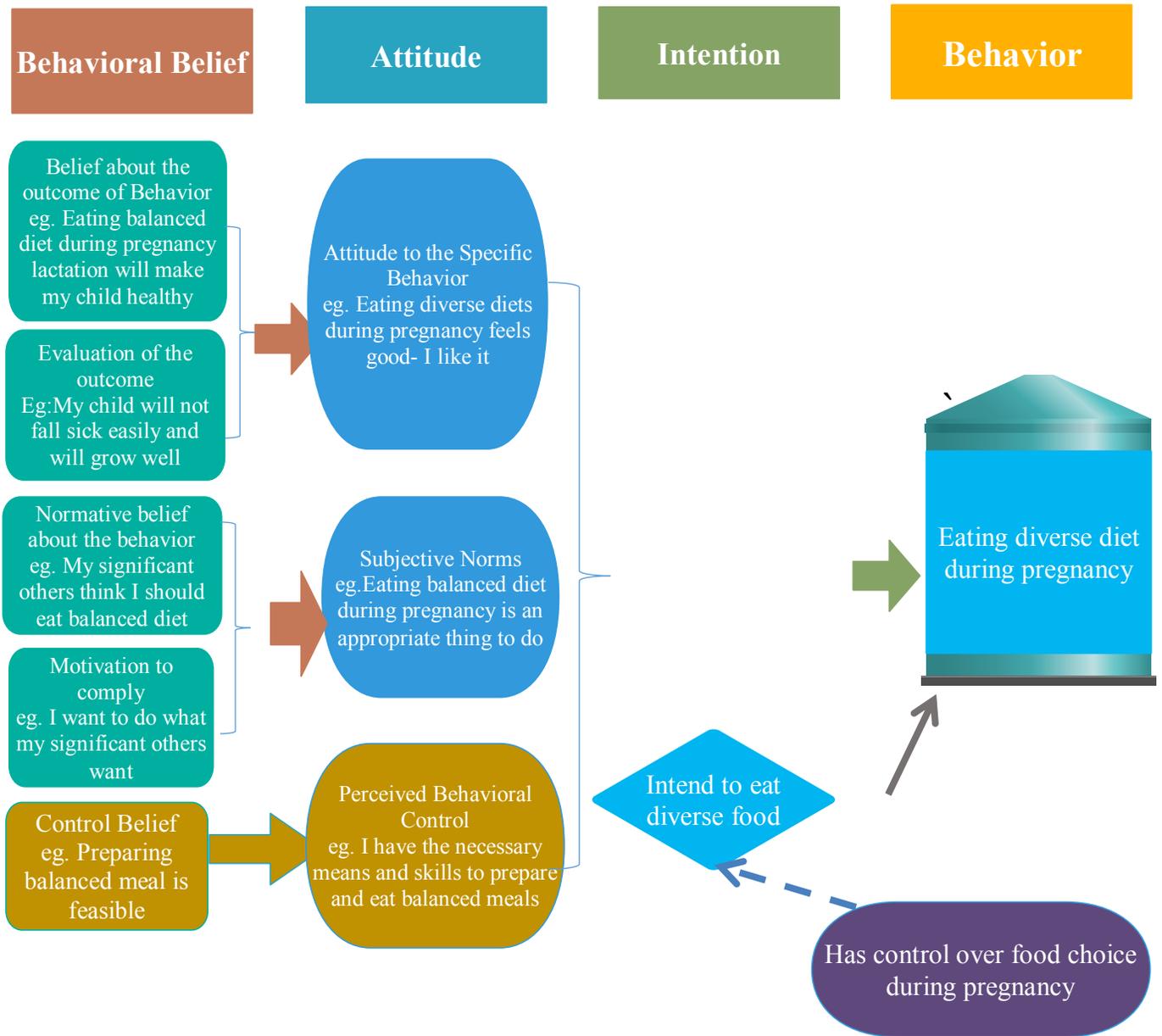


Fig.1 Reasoned Pathways for Eating Diverse Diet during Pregnancy& lactating period

CHAPTER 2. METHODS

2.1 Study design

This study used a qualitative design to understand whether people do put in practice what they know, and the perceived reasons that may encourage or discourage the right choice of food in that period on their knowledge and intentions towards good behavior change.

2.2 Study Setting

This study was conducted in the 3 selected districts: KICUKIRO, KAYONZA and NYABIHU. The two rural districts, KAYONZA and NYABIHU are geographically separated, one in Western Province and Western Province respectively, both facing different obstacles towards the reduction of stunting, compared to KICUKIRO district from Kigali city, known to have achieved a lot and still at a good step in reducing stunting.

According to the Demographic and Health Survey 2014/2015, the stunting prevalence rate in Kigali City was 29%, 22% and 17% for Nyarugenge, Gasabo, and Kicukiro districts consecutively. The Eastern province has presented 35% of stunted children under the age of five compared to 38% at the national level; with KAYONZA district being the highest in child stunting with 42%. Whereas, in West province, 45% of children below five years of age, are found stunted with the highest stunting rate recorded in NYABIHU district (59%).

2.3 Study population

The study targeted pregnant women, lactating mothers and children aged less than two years. We focused on the diet of mothers having babies under six months, as we assume that they are being exclusively breastfed and the right food choice in that period influence the growth development of those children.

Secondly, the diet of children aged from 6 to 23 months was assessed with the help of their mothers, assuming that those children are still having breast milk, (not exclusively) in addition to recommended complementary feeding.

Besides, we recruited men as head of households, CHWs and role model parents, grandmothers as they are culturally very influential to food habits, dietary intake to their daughters-in-law; especially in that particular period.

2.3.1 Inclusion criteria:

- Being a pregnant woman, a lactating mother, with a child below two years of age, one of their grandmothers, role model mother, or CHWs, residing in the selected 3 districts
- Being a man (head of the family) for one of the selected pregnant women or lactating mother
- Living/working in the selected sectors/cells for at least 12 months prior to the study.
- Being a local implementing partner, collaborating with the CRS _GIKURIRO project working in the selected districts.

2.3.2 Exclusion criteria:

- A non-pregnant woman, and non-lactating mother, with children aged more than two years.
- A lactating mother but not able to participate in FGDs; (with hearing or speaking disabilities).
- Being a grandmother, role model mother, or a man living in the neighboring (non-selected sector).
- Living/working in the selected sectors/cells less than 12 months prior to the study.

2.4 Sample size and sampling techniques

2.4.1 Sample size determination

Being a qualitative study; it does not need to be statistically representative. However, to obtain enough data reflecting the real image on food choices and other factors that may hinder the reduction of stunting, a good number of 24 FGDs and 12 KIIs were conducted until the theoretical saturation was reached (no more ideas coming out from participants).

From the three selected districts, two sectors per each district; one sector was chosen; with outstanding success in reducing stunting prevalence as a result of the Gikuriro program

interventions and one sector with notable challenges in fighting stunting. That is why KABATWA and SHYIRA sectors from NYABIHU, MURUNDI and RWINKWAVU sectors from KAYONZA, GAHANGA and MASAKA sectors from KICUKIRO, were considered for this study. In each sector, one FGDs for pregnant women and lactating mothers was conducted at the village level; where the probability of having pregnant and lactating women is high, then, one FGDs for grandmothers and role model parents, one FGD with men in the village, and one FGDs for CHWs per sector; were considered for this study. This made up four FGDs per sector to make up the total of eight FGDs per district and the total in the three districts made up 24 FGDs in addition to 12 KIIs.

We considered 80% of participants coming from first and second quintile then 20% from third and fourth quintile to ensure heterogeneity of our groups but also focusing on the most vulnerable groups; from Ubudehe category one and two.

2.4.2 Recruitment of study participants

a) Key Informants

Participants in KIIs were selected with assistance of personnel from the local implementing partners of the Gikuriro program. The selected individuals were contacted and invited to participate in the study.

The KII targeted:

- Two KIIs with people from the Ministry of Health, RBC, and ECD
- Two KIIs with key people from the Gikuriro program (SNV and CRS)
- Three KIIs with administrative district officers (one joint KIIs in each district)
 - Joint Interview with the District Health Unit Director and Vice Mayor in Charge of Social Affairs
- Three KIIs with informants from district hospitals (one interview in each district hospital)
 - Joint Interview with the nutrition officer with the In-Charge of Community Health
- Three KIIs with informants from health centers (one interview in one health center per District)
 - Interview with the CHWs in charge of health nutrition.
- Three KIIs with local implementing partner staff (one interview in each district)

b) Focus group discussion participants

Participants in the FGDs were selected through a collaboration between CHWs, CRS field staff, local implementing partner staff and the research team. The list of pregnant and lactating women was obtained from ASM, CHWs and respective health center records.

In each Sector we conducted:

- One FGD with pregnant women and lactating mothers,
- One FGD with CHWs,
- One FGD with grandmothers to assess their influence on food choice to their daughter and grandchildren
- One FGD with husbands, to assess their influence on food choice and their involvement in improving their household's nutritional status.

2.5 Data-collection procedures and tools

FGDs and KIIs guides were developed to collect data for this study in three districts. The main guiding questions from these data collection tools were developed as per the study specific objectives, with probes to make the participants detail their insights, but still in the scope of the study.

Before starting field data collection, six Gikuriro program experienced enumerators were approached and underwent a one-day training on the study objectives, methods, data collection tools and ethics during research.

The training was followed by a one-day study tools piloting in Kicukiro district, Kanombe sector at BUSANZA Health Center, where both enumerators and study principal investigator (the student) met pregnant and lactating women, heads of households, CHWs and role model parents and with old women considered as grandmothers of those children below 2 years old. After the pilot, all completed transcripts were reviewed and feedback was given to the field workers and discussions were done to improve both the questionnaire and the good format of the transcript.

Interviews were conducted at the workplaces of the key informants or in any other comfortable place that was proposed by the key informants.

For the FGDs, participants were between 8 to 10, sitting together. Participants were given codes or numbers, helping the note-taker to recognize who was responding, anonymously. To capture all the information, voice recorders were used for both the KIIs and FGDs without forgetting the field note-taking. At the end of each day, the field notes were expanded by the note-taker with assistance from the moderator while creating a daily report on data obtained. Thereafter, comprehensive verbatim transcribing of the records was performed.

2.6 Data analysis

During the analysis of our qualitative data; the content analysis was done, as it was inspired by Graneheim and Lundman (21), and that helped us to analyze and interpret the obtained data. The verbatim transcripts were reviewed for completeness and quality control. All Kinyarwanda transcripts of the FGDs and KIIs were read and re-read in Microsoft Word for a deep understanding of the collected data and that helped as long as it was performed simultaneously with the data-collection process, in order to allow the adjustments to be made timely to the data-collection tools while focusing on emerging themes.

As a first step, in the analysis, the coding of transcribed data was done, thereafter, codes were sorted and categorized into categories and sub-categories. The analysis process was iterative, moving back and forth between text, codes, sub-categories and categories. After obtaining the codebook, the labels were attached to fragments of text to facilitate the grouping and comparison of similar or related pieces of information when analyzing the data. Thereafter *Atlas ti version 7.5.18* was used for the collected qualitative-data analysis. Finally, key information and quotations were reduced and displayed, and concurrent tables were produced in order to identify the saturation of the information. All five steps of qualitative-data analysis (reading, interpreting, coding, reducing, and presenting), were performed to ensure consistency within the data and the important quotations were included in the report where they were translated from Kinyarwanda to English.

2.7. Ethical considerations

Before starting field data collection, the study protocol was presented at the University of Rwanda, College of Medicine and Health Sciences and at CRS Gikuriro program.

The research protocol was approved by the College of Medicine and Health Sciences Institutional Review Board of the University of Rwanda (**Approval N°: 353/CMHS IRB/2019**). Prior to each and every FGDs and KIIs, we informed the study participants, all about the aim and the study techniques with also their right to stop their participation at any time they want without consequences. Those who accepted to participate, signed a consent form with allowing us to record the discussions before any FGDs and KIIs started. They were also assured about the full confidentiality and anonymity.

CHAPTER 3. RESULTS

3.1. Socio-demographic characteristics of the study participants

The characteristics of the sampled population are shown in the below Table 1. In our study sample, 154 were women and 92 were males, and they were aged between 21 to 80 for groups of women and 28 -65 for groups of men. Nearly 87.5% of our study participants were educated from primary to secondary school. The remaining, 8.55% had University level, where 3.95% have not been at school. More than half of FGDs participants were from poor families classified in category one and two known as extremely poor and poor by the national Ubudehe classification system, and farming was the main activity reported for the majority of the respondents, where the other portion was in commercial activities and public work.

Table 1. Characteristics of the study participants: gender, age and occupation

FGD/KIIs	Male/Female	Age range (years)	Education level	Occupation
FGD1	0/10	21-- 40	Primary- Secondary	Farmers (7), Business (3)
FGD2	4/6	27--39	Secondary	Farmers (4), Business (5)
FGD3	0/9	48--69	Primary- Secondary	Farmers (6), Business (3)
FGD4	10/0	30--56	Primary- Secondary	Farmers (8), Business (2)
FGD5	0/10	23-- 38	Primary- Secondary	Farmers (9), Business (1)
FGD6	4/6	25--47	Secondary	Farmers (5), Business (5)
FGD7	0/10	45—71	Primary- Secondary	Farmers (10)
FGD8	10/0	29--58	Primary- Secondary	Farmers (7), Business (3)
FDG9	0/10	28--39	Primary- Secondary	Farmers (9),Business (1)
FGD10	5/6	27-- 43	Primary- Secondary	Farmers (8),Business (2),Other (1)
FGD11	0/9	42--65	Primary	Farmers (9)

FGD12	10/0	39—57	Primary-Secondary	Farmers (7), Business (3)
FGD13	0/10	25—37	Primary-Secondary	Farmers (10)
FGD14	4/6	28-- 55	Secondary	Farmers (6), Business (4)
FGD15	0/8	46--79	Primary-Secondary	Farmers (7), Business (1)
FGD16	10/0	33--60	Primary-Secondary	Farmers (6), Business (3)
FGD17	0/9	28--39	Primary-Secondary	Farmers (7), Business (3)
FGD18	4/6	29--44	Primary-University	Farmers (4) Business (4), Other (2)
FGD19	0/10	43-80	Primary-Secondary	Farmers (8), Business (2)
FGD20	9/0	31-- 60	Primary-Secondary	Farmers (5), Business (4)
FGD21	0/10	26--40	Primary-Secondary	Farmers (8), Business (2)
FGD22	3/7	22--47	Secondary-University	Business (4),Other(6)
FGD23	0/9	44--73	Primary-Secondary	Farmers (4), Business (5), Other (1)
FGD24	10/0	39--59	Primary-Secondary	Farmers (5), Business (5)
KIIs	9/3	31--52	University	Employees (12)

As it is shown in the below table 2; the study findings embrace a theme with three categories where from the analyzed data; 12 subcategories were obtained, in relation to food choice and its perceived determinants among pregnant women, lactating mothers with their under two years 'children.

Table 2. Overview of theme, categories and subcategories

Theme	Categories	Sub-categories
Perceived determinants for food choices among pregnant women, lactating mother with their under 2 years children	Perceived drivers of food habits	<ul style="list-style-type: none"> -Imbalance in nutritional health knowledge -Poverty and lack of husband's support -Education level and culinary capabilities -Time pressure and Nature of daily job -Husband and wife conflicts -Climate change and food insecurity, -lack of clean drinking water - Negligence of some mothers
	Approved and disapproved food by the community	<ul style="list-style-type: none"> -Cultural and religious beliefs restricting some food types; meat, milk, fish, carbohydrates, legumes... -Influential groups towards making good or bad food choices
	Personal belief on dietary diversity	<ul style="list-style-type: none"> -Perceived benefits of eating diverse food types, exclusive breastfeeding and complementary feeding -Feeling incapable of exclusive breastfeeding and prepare diversified nutritious food.

3.2 Perceived drivers of food habits among pregnant women, lactating mothers with their under two years' children

As derived from the KIIs and FGDs; participants highlighted the perceived elements that are making it hard or easy to eating a balanced diet:

3.2.1 Imbalance in nutritional health knowledge

The reported improved access to nutritional health has changed the perception about benefits of good eating habit, but there is still imbalance in knowledge about making good food choice and preparation.

A large number of participants reported that many people in general do not consider the nutritional value while consuming a particular food item, on the contrary they try to maximize the quantity not the quality, which may be caused by financial capacity with also not being sure of having sufficient knowledge about the nutritional value of the food they commonly eat as part of their daily meals. The majority have shown that they are aware of required food types in human body as they give energy, build and repair tissues, also protect the body from diseases, but others were not sure of having that package.

One of the participants reported in an FGD: *“Because CHWs taught us the 3 basic food groups that are needed in order to have a balanced diet, when preparing for my kids I just consider those items with which I and the kids have been habituated to for long, like plantains, potatoes, beans and vegetables from Akalima k’igikoni then check what is missing and go to the market of course if there is money, if there is not, I give them what I have...,...some mothers are not taking it seriously, difficult to attend nutritional health sessions, ...”*. (FGD Mother 9- Kayonza District).

It was indicated that some parents don’t participate in local meetings, akagoroba k’ababyeyi, even at the health center, thus, they stay behind, with no information about the benefits and risks that they can encounter if they choose to eat healthy diet or not.

“..., I use to feel like, I can't find time for those educational sessions and concentrate in working tirelessly to find food and other needs...lacking knowledge on food diversification and healthy diet preparation has been an obstacle till I realized that my little child is in yellow (lacking important nutrients) ..., at the risk of being stunted without realizing it..., parents like me are still out there but hope that they will change their mind as I did, before it's too late. Now I try my best and ask advices from CHWs, role model parents...” (FGD Mother 7- Kicukiro District).

Some participants believed that considering nutritious and balanced food intake is very important to their health but not be easy to achieve every day except for rich people. Also, at some point pregnant women were believed to be not very concerned about food diversity as long as they are not feeling sick.

After many and different interventions, some parents especially; mothers kept improving their understanding on the adverse health situation that can be met, and the needed behavior change.

“When we consider previous years, knowledge was at a very low level, approximately at 25%, but since we've been trained, educated about kitchen gardens, healthy diet, there is a good improvement. We realized also that the non-use of health services has been causing stunting for our children, as pregnant women were not used to attend ANC services during the first trimester, ...we used to go there during the second, when 6 months pregnant, and it is sometimes too late for some preventable health risks. Nowadays, that problem was solved and we are now at 75% in our district.....Children undernutrition was devastating in this area but after being taught, we're committed to support each other, to have healthy eating behavior.” (FGD Mother 5- Nyabihu District).

3.2.2 Poverty and lack of husband's support

As mentioned by the study participants; poverty is not allowing mothers to make good food choices, in addition to that, lacking husbands support makes life very difficult at home; gender based violence, (repeated disputes, mistreatment, lack of good communication,) was repeatedly reported by respondents, as it is hindering each and every aspect of healthy behavior at home.

“..., from my understanding, women are the ones, to know everything concerning food and its preparation, ..., I think that men as head of the households, are responsible of chasing money and procure food then wives take control of other following steps...the problem arise mostly when she asks for money that I don't have, when I'm not yet payed or didn't find job to do..., it is not easy, overcoming poverty is very difficult, making it very hard to satisfy the needs of household member.” (FGD Men 9- Kicukiro District).

The knowledge of the right way of choosing food and make the minimum acceptable diet, is being increased due to the decentralize services, with the help of nutritionists at the health facilities, plus the remarkable work done by CHWs, together with other local implementing partners 'interventions. Thus, the majority of participants were recognizing the main constructs of a balanced diet, but saying that it is still a challenge to put what is known into practice mainly due to poverty and its related conflicts at the household level.

“...mothers are facing various obstacles to eat balanced diet mainly due to poverty which is sometimes known as the source of misunderstanding between husband and in that instability, ...bad state of mind, ... the wife can't manage to make good food choice and prepare it healthily ... some mothers who are living in poverty don't even have freedom to choose any contraceptive method without their husband's approval..., they are giving birth even if they don't have enough to feed them” (FGD CHW 7 Nyabihu District).

3.2.3 Education level and culinary capabilities

The level of education was stated as very influencing in understanding the right practice and the benefits from choosing good food. Moreover, participants admitted that education make it easier to obtain many sources of information and learn quickly, while targeting to improve food preparation skills but that interest varies between individuals.

Thus mothers with low education level, tend to choose food based on what they familiar to prepare and eat. As respondents stated: *“...there are still limitations in food diversification..., many of us have not been in secondary school... due to many reasons, therefore we're eating what we are habituated to eat; not very demanding in preparation and easily found in the neighboring sectors;*

“... potatoes and beans, green vegetables...” ...it is in that way, where, many of us become used to make some personal arrangement in preparing low nutritious quality food in their households...” (FGD CHW3-Nyabihu District).

“..., It happens to me, thinking that rich and educated people are the one who can be able to eat healthy food but I have seen rich women who don't care about how food is prepared, always busy..., I think the continuous learning will help, also depending on how well I take the lessons given, sometimes I don't get it clearly, forget some details, hoping that one day, I'll be able to maintain a healthy eating habit, with the minimum resources I have with also the help from CHWs and others...” (FGD Mother5-Kayonza District).

3.2.4 Time Pressure and nature of daily job

Time has been repeatedly mentioned as limiting the opportunity of preparing healthy diet. Different jobs are taking so many hours of the day, then a good number of mothers are not having time to prepare separate food for themselves even for their babies. In that case they found themselves eating anything available at home. One mother said,

“.....women in rural areas, even in urban towns, are casual workers, with low income, ..., they invest a lot of their time, energy in searching for money to respond to family needs, ..., so balanced food preparation, need different materials, in a safe and good environment which demands financial support and enough time, ..., that is difficult to find nowadays ..., some mothers take the courage and make sacrifices to care for the family members within that limited time but others are not, and that results in eating unhealthy diet...” (FGD CHW 1-Kicukiro District).

“..., feeding babies needs to have money...I get up early morning searching for casual work, ..., when I get lucky to find one, I concentrate on that regardless of hours that it will take me, ...arriving home late in evening, tired.... what I do, is choosing that food items with reasonable cost, which need less time to prepare, ..., well, ... food diversification needs not only money but also time to the market, different ingredients, materials and time for preparation.” (FGD Mother 6-Kayonza District).

3.2.5 Husband and wife conflicts

A peaceful state of mind was commonly reported to be a notable factor affecting eating habits for pregnant women and lactating mothers which finally affect their under two years old children. As this was responded; *“...well..., I used to talk to some mothers who are passing through some of the stressful conditions such as running out of money for buying food and other necessities, and that few money earned by the head of the household is being spent in pubs, or to the husbands’ concubines, which most of the time result in conflicts and lasting misunderstanding between man and wife which compromises on deciding together how to buy quality food for the household...”* (FGD Role Model Parent 8 - Nyabihu District).

“..., frankly speaking when my husband and I are not understanding each other on a particular issue I become sometimes taken, careless about food choice and preparation,...children are the ones vulnerable in that situation..., imagine those families who live in continuous conflicts,...kids may even get sick without noticing it.” (FGD Mother 8 - Kicukiro District).

3.2.6 Climate change and food insecurity

Seasonal fluctuation has a big influence on food availability or scarcity. Thus food availability of fresh and variety of food items at affordable prices appeared to be one of the considerable factor determining the diet for the study participants.

As reported; finding carbohydrates, vegetables, and fruits at an affordable price favor diversity in food preparation. However, study participants claimed that the food price tends to be most of the time very high compared to their financial capacity. During rainy season, a lot of vegetables become available at low price, and that is reported to be influential to make good food choice. The most experienced conditions, were characterized by either heavy rain resulting in disasters like floods, and related health risks, or long dry seasons; all making it very difficult to afford fresh food, like vegetables, fruits and some ingredients for many households. Considering the high food price, some mothers tend to avoid cooking a diversified diet and become inclined to eat what they can afford even if it is unhealthy for them and for their children.

“...climate keeps changing in an unpredictable way...farmers are being challenged..., when there is availability of different food types, at a low price, in good periods, mothers may be tempted to buy a variety of food and then cook a diversified meal. However, we’re most of the time experiencing either heavy rain or long dry seasons...and that makes life very difficult..., experiencing the unexpected...,... in this period many families are lacking adequate financial support to afford those vegetables, fruits, animal protein etc.” (KII 2-Kayonza District).

Food insecurity have been faced by many households; as many revealed that are used to skip breakfast and sometimes lunch mainly due to shortage of food; resulting in unaffordable agricultural and animal products. In that case, children below two years, especially from very poor families became so vulnerable. *“Many of us are from lower and middle ubudehe categories, ..., there is a given support, trying to fight malnutrition, ...,speaking on behalf of others who are not here, in group discussion, ..., adopting good food choice behavior is very difficult when you are very poor, and food is becoming very scarce, expensive, day per day..., particularly, feeding little children is a serious challenge, pregnant and lactating mothers are cultivating for others, or working in tea plantation while the babies are suffering from hunger..., sometimes eat once or only twice a day. You can see a kid in the morning eating potatoes the whole day while waiting for the parents to come and prepared food at night...” (FGD Mother 6 -Nyabihu District).*

3.2.7 Lack of clean drinking water

Good food practice goes hand in hand with clean object in safe environment. The shortage of clean drinking water was repeatedly mentioned as it is limiting eating healthy diet in many different ways; *“... mothers are very disturbed and challenged by the lack of clean water, ..., as we use to teach them that clean cooking materials, clean food items and cooking environment with proper hands washed with water and soap, are among recommended actions towards healthy food preparation, so, they need to be motivated by easing access to clean water...in that situation children are easily affected by infectious diseases resulting in low nutritional absorption and other risks....” (KII 3 - Kicukiro District).*

“Inaccessibility of clean drinking water is still an obstacle, as they teach us to clean and eat well prepared food, in a clean environment, ...I or my kids travel long distance to fetch water, that is limiting the required cleanness of materials, in the environment sheltering kids...diarrhea, intestinal worms are still a problem,...” (FGD Mother2-Nyabihu District).

3.3 Perspectives on approved and disapproved food

Depending on the geographical location, parents are experiencing different ideas about what to eat and what not to eat as shown in table (3&4) but most of the time, the target population doesn't have trustable source of that information. The explored beliefs restricting or allowing certain food types are:

3.3.1 Approved food types

Pregnant women and lactating mothers are differently experiencing this particular period which is surrounded by ideas, rumors in the community, the influence from relatives, in-laws and other sources of information regarding what to eat in favor of their health and for babies. As generally said by participants; soft food; some carbohydrate, cereals, vegetable, fruits, animal proteins and soft drinks are allowed as long as they sustain good health for both the mother and babies.

“..., soft food that cannot cause constipation, cooking banana, with plenty of green vegetables, cereals and some fruits..., animal proteins are rare to find but are necessary, such as; beef, chicken meat, eggs, fish etc... also drinking porridge from a mixture of cereals is good; the baby can grow healthier, and the mother also stay stronger and healthy...all depends on mindset of surrounding people with available and affordable food in the community.” (FGD Mother 9- Nyabihu District).

3.3.2 Disapproved food types

There are cultural beliefs, disapproving certain types of food during pregnancy and lactation. Many ideas were turning around, tubers and other hard food which are thought to cause constipation and also reduce breast milk production, spicy food that considered to increase body heat and some drinks that are considered as causing abortion, other food are avoided just due to mindset.

“...yes, cultural beliefs found here in our community, for example, people still have misconception about eating tubers like potatoes, yams..., others can't eat pounded cassava leaves “Isombe” with the reason that it looks like cow feces” amase”, refusing also to eat those small fishes called “Indagara” simply due to their look of widely opened eyes even if they are dead already. But with continuous nutritional education, we believe to see a change of their mindset...” (KKI 1 - Kayonza District).

Furthermore, religious beliefs are influencing people to deliberately avoid particular food items, without caring about their nutritional aspects. Some people can't consume meat, cow milk, just because their religion prohibited it. Therefore, the most vulnerable are those children below 2 years of age, who are unable to choose by themselves what to eat.

“...Religion has a strong influence on people's health..., there are people who can't eat, goat and lamb meat, potatoes, yams, eggplants, etc..., but such beliefs are changing... others are religiously influenced mainly from some of the Adventists' sects that are strictly disapproving meat and milk, where they opt for alternatives from Soja products...from my point of view, even if Soja is also nutritious, but I think, it might not have the same nutritional value as those from animal proteins.” (KKI 1-Nyabihu District).

3.3.3 Influential groups towards making good or bad food choices

Parent's dietary habits were reported to have a strong influence to their children eating behaviors. Some parents tend to consider food with which they are habituated to consume, during their everyday life. Eventually, household feeding practices influence pregnant, lactating mothers who became motivated or demotivated to choose certain types of food. Generally, those women from countryside are used to take diets with carbohydrates (Cassava, potatoes, and plantain.) and beans; whereas, mothers from urban backgrounds seem to be more tended to include non-carbohydrates, processed food, some fruits, vegetables, and mostly fried food. One participant elaborated on that during discussions:

I am used to eating Irish potatoes and beans since my child hood. If I can have and eat all the food available in the world except without the one I've mentioned above, I feel, I did not eat for so many days. I can hardly survive without eating beans.” (FGD Mother 1-Nyabihu District).

Some negative influences are seen from parents who became alcoholic, living in continuous conflicts, some mothers doing prostitution, those can't find time for their children and don't participate in nutritional education programs thus, not eating healthy diet. On the other hand, Community health workers (CHWs) plus role model parents, nutritionists at the health centers, Gikuriro's local implementing partner staff, were recognized as positively influencing good food habit.

Apart from that, husbands (head of household), grandmothers and local leaders, were also reported to be very influential in the mother's choice on food choice.

One participant illustrated this: *“... nutrition education sessions are given... about eating a balanced diet, preparing it properly, especially, pregnant, lactating mothers, and the right practice towards feeding their under two children, but sometimes peers present a negative influence, trying to keep the routine about food to be eaten, choosing those that cost less and require little time of preparation...”* (KKI 4 -Kicukiro District).

One participant in the FGD said this: *“Because some educated parents seem to be very busy, getting up very early in the morning and coming back very late, being tired and even exhausted...it become not possible to control the diet diversity... example for single mother while pregnant or lactating, so, being alone, and everything is done by her, including shopping, preparing, She may become subsequently limited to a single and unhealthy dish.”* (FGD Mother 8-Kayonza District).

Participants also revealed that social and personal interactions are factors influencing their food choices and dietary intake. Women who have a good will to participate in different local meetings like **akagoroba k'ababyeyi**, **igikoni cy'umudugudu**, **umuganda**, and **health communication sessions** at the health center, are positively exposed, and being in that network was reported to have a positive influence towards involving other parents, particularly mothers in the journey of eradicating malnutrition while eating healthy diet. One participant mentioned this in the FGD: *“Since I started to join other women in akagoroba k'ababyeyi, also participating in igikoni cy'umudugudu, I obtained new good friends who inspired me in so many different ways and among those, we kept supporting each other while exchanging ideas, advices on how to work hard and get food, to prepare and serve a balanced diet and be a special mom as we keep in mind that there will be good results for the household even for the country because we keep saying that those children are the future leaders of Rwanda “our country”. “Even if some women that stay different, thinking that it's not feasible, that it is for rich people who can afford that diversity of food but I can assure them that if we work hard, plan together (husband and wife) we can make it, at least we can't miss the minimum acceptable diet...”* (FGD Mother 10 -Kicukiro District).

So many influences on choosing certain types of food, as it was shown in table 3 given by study participants:

“....it is not allowed to eat Cassava, and other hard food during pregnancy and lactation...it can cause the baby in the womb to be unwell...mothers also can lose breastmilk.... they use to tell us that we need to eat only soft food, green vegetables and fruits to increase blood when pregnant and then drinking enough porridge with also soft food to have enough breast milk...others say that eating some meats like the cow’s breast, kawunga etc... the breast milk stops to be produced....”

(FGD Grand Mother 2 - Kicukiro District).

3.4 Personal beliefs on dietary diversity

Parents are having different beliefs on the right food to be eaten, during this particular period. Food diversification is taken as necessary but difficult to achieve depending on the individual knowledge, peer influences, financial capacity and commitment to eat healthy food.

3.4.1 Perceived benefits of eating diverse food, and exclusive breastfeeding

Awareness has been raised, said by participants, mothers are encouraged to eat a diversified and well prepared meal, so that them and babies can stay healthy. They are also sensitized to give birth at health center so that the follow up can be easily done. The majority of participants know the benefits of eating well, early breast initiation and exclusive breastfeeding but still parents and caregivers need the full commitment in ensuring that: the mother eats healthy food and the baby is breastfed within one hour after birth and continue till six months without any other food given.

As said by participants: *“..., CHWs are teaching us, helping with close follow up and making sure that every pregnant mother eats diversified food...,...deliver at the health center where all necessary help and advices are given.... the first breast milk “Umuhondo” is said to be very nutritional to the baby....and breastfeeding exclusively within six months helps the baby to grow healthier... with minimized risks of being sick or stunted...but not every mother can afford to fully complete this period without using other alternatives....”* **(FGD Mother 4-Kayonza District).**

Benefits on complementary feeding are known at different levels, mothers recognize it as building the child’s immunity, protecting him from stunting while enhancing his growth and development. However, obstacles are still there when trying to ensure that children (<2yrs) receive the minimum acceptable diet and the minimum food frequency and also continuous breastfeeding till two years. Mothers are encouraged to keep in mind that; the full nutritional package, effort, careful follow up and care, targeting healthy diet, is needed during that golden period.

“..., the child needs breastmilk but also complement with soft food containing proteins, vitamins, consume porridge and some fruits as it helps children to grow fast and healthier...mothers who attend the kitchen of the village are having a good package on how to use minimum resources they have and try to feed the acceptable diet, at least 3 to 4 times a day and more... others who are not participating, may receive advices from health posts, CHWs etc...”. (FGD Father 6- Nyabihu District

3.4.2 Barriers to exclusive breastfeeding and complementary feeding

1) Feeling incapable of exclusive breastfeeding

In the community, not every woman feels interested to attend health educational sessions, Akagoroba k’ababyeyi. Sometimes it gets difficult to be reached by CHWs for those mothers who go very early to work and come back late in the night. It was stated that few mothers are not giving birth at the health facility, sometimes due to the delay on the way going there and when the baby comes in mid-way, the early breast initiation is not done. There are still some cases of mothers who are influenced to first give traditional medicine, or juice or water to the baby trying to stop the baby’s abdominal pain. Others, with the fear of not having enough breastmilk, they tend to give him formula milk. Mothers have shown so many challenges that are not allowing them to fulfill the exclusive breastfeeding, where in all three visited district, participants were seeing it as very difficult to achieve, mainly due to small value given to it, types of jobs, poverty, lack of time and husband care plus other individual reasons.

“... mothers are facing many challenges as it happens to not find breastmilk immediately after birth thus you become forced to use formula or cow’s milk... others don’t find enough food and drinks that can help to have sufficient breastmilk for the baby...another obstacle is the short maternity leave for those mothers who are employed, and may be working very far from home, ... some are trying till three months or four but are not enough...time and lack of husbands support is also an obstacle because...many of us are casual workers and it not always possible to go there with the baby and breastfeed while cultivating or working in tea plantation...” (FGD Mother 10- Nyabihu District).

“ ..., having a big number of single mothers who are doing prostitution, it is a burden to the district, as they don't find enough time dedicated to their children, many of them stop breastfeeding in few months after birth, opting for formula or cow milk..., telling them to breastfeed exclusively for 6 months as well as having a healthy eating behavior, needs intensive lessons from multidisciplinary approach...with particular attention to the vulnerable kids... ”. ((KKI 1 -Kicukiro District).

2) Obstacles towards complementary feeding

Participants reported so many different reasons that are not easing good practice while feeding children from 6-23 months, but still recognizing effort from multiple sectors and various support given to many households in fighting bad eating habits, and reducing child stunting prevalence which tend to be very high in rural areas.

“ ..., lack of nutritious food, due to poverty, ...some children are still skipping meal or consume insufficient quantity, lack of water and other hygienic materials needed for household activities, inadequate knowledge on good dietary practice ,, we are always busy chasing money, no time for children care, many households are having conflicts, children are becoming vulnerable, malnourished mainly due ignorance, lack of time and collaboration between parents, some mothers are becoming unable to follow and care about eating balanced diet, even for little children,..., many care givers, household helpers found in urban areas have low knowledge and don't care about nutritional health,.., and they are the one that mothers have given full responsibilities for their babies' health..., the truth is that there is still a long way to go, ... ” (FGD Mother 1 -Kayonza District).

CHAPTER 4. DISCUSSIONS

4.1 General discussion

This study explored a range of perceived reasons influencing food choices among pregnant women, lactating mothers and their children less than two years of age and our findings have revealed a wide-range of factors influencing food choice and eating habits of residents from Kicukiro, Kayonza, and Nyabihu districts.

Knowledge and perception of good food choices and eating a healthy diet, knowledge on nutritional benefits of dietary diversity, income, person's cooking skills, food tastes, food costs, food preparation capabilities, familiarization to certain food, peer influence, nature of jobs and living lifestyle, husband and wife collaboration, and availability of cooking equipment, societal culture and religious belief, residency, and seasonal changes and food insecurity; were the main reported reasons that determine food choices, feeding behavior among pregnant women, lactating mothers with their under two children. The data are supporting ideas from different studies, showing that these are interrelated aspects.

Government and other stakeholder's efforts are strengthening awareness on mother and child nutritional health during pregnancy and lactating period. However, pregnant and lactating mothers and under two years' children are not having sufficient nutritious foods, some are not affordable by many households such as; dairy products, cereals, fish, meat, fruits and other nutritional supplements, mainly due to low financial capacity and other related obstacles, as reported by the study participants. These results are in agreement with the study done in West China by B, Luo., et. Al, which revealed that pregnant women living in countryside rarely eat sea fish, milk and dairy products (22).

It was also reported that; low education level, having low level of nutritional knowledge and lack of adequate incomes to purchase of the necessary foodstuffs considerably put limit on the consumption by of desired nutritious diets. We also found that some mothers are still drinking, and few smoking regardless the knowledge of risks from that behavior. Besides, studies have confirmed drinking and smoking, to be dangerous for pregnancy and fetal development. Therefore,

it is necessary to continue with encouraging and helping pregnant, with also lactating women to quit or abstain for these detrimental habits during that particular period. (22)

From our findings; pregnant women and lactating mothers' food choices were highly influenced by the attitude of some other persons, or some influential groups in the community, who were known as subjective norm, such as their husbands, mothers, mother-in-law, relatives and friends, CHWs, role model parents, local leaders, local implementing partners of Gikuriro program, nutritionists at health centers, etc. The subjective norm affects healthy eating behaviors of the targeted group ultimately by influencing women's attitude, as confirmed by *Fallis A.* together with other studies that have shown that women's concept of diet was deeply influenced by people around them, who may lead them to positive attitude or negative and unscientific attitude (23,22).

In our study, some mothers and husbands, were influenced by traditional and religious belief where they advised pregnant women to hold on some restrictions, such as avoiding rabbit, pork, lamb and goat's meat, with also avoiding dairy products which are widely considered to be healthy and nutritious foods. A study of Luo B *et al.* (22) pointed out that the family members were the most central networks for imparting antenatal taboos to pregnant women. Therefore, it is very crucial to educate the care givers, generally the pregnant women and lactating mothers, husband, mother-in-law or grandmothers, and other family members as well as neighboring community and friends in order to improve that targeted group's diet behaviors.

Women's poverty and financial dependency on the husband, and intimate partner violence were identified among important hindrances towards having a diversity of food and eating a balanced diet. Previous studies, highlighted the association between poverty and household conflicts in Rwanda, where, both intimate partner violence and poverty are known to contribute to increased stress, powerlessness and social isolation among exposed women (24).

A large number of pregnant women and lactating mothers have shown the likelihood of not having enough time for healthy diet preparation during daytime mainly due to different nature of jobs they do for living. It was shown that they tend to eat and even feed their babies what is easy to find (available& affordable), quick and easy to prepare without worrying about nutritional intake.

This might be explained by the fact that the lack of sufficient knowledge of nutritional value of different types of food, lack of deep understanding on the benefits of eating balanced diet and risks

if we do not comply, also the lack of financial support plus limited time to care for the family members influence those mothers with their under two years' children to be more prone to consume low nutritional quality food resulting in unhealthy diet and its risks.

According to FAO report in 2017; the population growth in low-income countries is expected to stimulate, high levels of food insecurity; with large increases in demand for staple crops, such as roots, tubers and plantains, cereals, milk, meat products and fruits. All that, resulting in increased burden of malnutrition, undernourishment, micronutrient deficiency and overweight. Therefore, improving the access of vulnerable populations to food and ensuring food security, is among priorities (25). Thus, in our study area, a considerable number of population are farmers but facing challenges due to the limited types of food that are grown there, which makes it a necessity to go to the market looking for more food with good nutritional quality. Along with limited financial capacity, limited knowledge and access to resources for cooking and the poor standard of living conditions notably limit the likelihood of the meal frequency which is suggested by the existing study that was done in Ethiopia and highlighted that exposure to nutrition information, attitude towards specific dietary habits and nutrition knowledge, attending antenatal care and postnatal care, maternal education and income, were seen as predictors of maternal dietary practices, in addition to that meal frequency, educational status, occupation of head of household, religion, maternal age and marital status, were discovered as predictors of maternal nutritional status which in turn influence dietary practices and complementary feeding (26).

Due to the current governmental efforts in promoting nutrition related interventions through health extension program, health facility nutrition services, community health workers and women-based development programs and active involvement of pregnant women in antenatal and postnatal care as well as in Akagoroba k'ababyeyi meetings at community level. Even though health sectors developing different health and nutrition programs, the results have shown that more efforts in strengthening healthy eating habits, and dietary practices during pregnancy, lactation and during complementary feeding for children aged 6 to 23 months, are needed.

Differences in avoided and preferred food was seen in the three sampled districts, and this might be attributed to differences in geographical location and socio-cultural differences. Because, what is taboo (culture) in one society is not taboo in other society. In this study, husband's income was considerably associated with dietary practices of pregnant women. This might be due to the fact

that, the more husband earns, the more he invests on family nutrition and health which in turn attributes to good dietary practices of family in general and pregnant women in particular. Furthermore, earnings can influence availability of resources which in turn improve access to a diversified diet and thus improve dietary practices. This study is in line with other studies which also reported that income has positive significant association with women dietary practices (27).

Women's disproportionate poverty, low socioeconomic status, intimate partner violence and reproductive role not only expose them to various diseases, but also limit access to the needed nutritional and health services. Domestic violence, affect women productivity, autonomy, quality of life, and physical and mental well-being (28). As participants reported, it is always difficult to think about your household members 'nutritional health while you are physically, financially, mentally or emotionally broke.

The lack of needed supportive behavior from men, is putting a big gap in maternal nutritional health and automatically affecting children, where irreversible and shocking risks affect the health of under two years' children.

4.2 Methodological considerations

This study applied the purposive selection of participants; pregnant and lactating mothers, men, grandmothers, CHWs and role model parents living in rural areas, from three districts of Rwanda. Trustworthiness in qualitative research refers to addressing credibility, transferability, dependability, and confirmability of the findings (12).

Credibility was assured with consistent checking on how well the data and its analysis responded to the objectives of the study. Thus, the careful selection of the study setting and the participants, as well as the method have been taken into account. Besides, we have covered sufficient group discussions, spent enough time with participants and that enabled us to capture real images on their current perceptions on food habits. Thus, one researcher and two supervisors with expertise in public health and qualitative research, have collaborated throughout the whole project and that contributed in securing the trustworthiness of our findings.

Transferability of the findings was attained by the fact that our study was carried out in the Western and Eastern province of Rwanda and in Kigali city. The study area in Kicukiro district represents the urban-rural area while Kayonza and Nyabihu districts represent the rural settings. Consequently, we trust that our results are possibly reflecting general (a good part of) understandings of Rwandan mothers on food choices and related obstacles.

Dependability is guaranteed; because this research was well conducted, and by the time it may be repeated using the same tool, applying it to same participants, it can produce the same findings.

Confirmability, was insured, as long as the researcher analyzed the translated data and discussed the findings analysis, but with careful follow-up of two supervisors with different professional backgrounds, and experiences. Many joint discussions, corrections, were done until the final document was obtained.

A thorough description of the procedures was provided to improve the trustworthiness of the findings. A clear picture was given on the perceived determinants of food choices and complete description of the data gathering and analysis is presented with quoted information from FGDs and KIIs to support the trustworthiness of our findings.

CHAPTER 5. CONCLUSION AND RECOMMENDATION

5.1 Conclusion

While congratulating the efforts from government, and various stakeholders, towards eliminating malnutrition, mothers are sensitized, encouraged to eat diverse and healthy food. However, putting that in practice is still at lower a problem.

Considering that; the lack of husband support was among the factors that hindered the practice of adequate nutrition, it is important that the nutrition education for both parents and counselling given during each antenatal visit should be intensified, also programs eliciting husband support should be organized. Furthermore, women should be advised to encourage their husbands to attend such programs and that will enhance a sense of shared responsibility for the health of the pregnant woman and the lactating one with her child, particularly in the golden period of 1000 days.

The most reported aspects that need improvements are those regarding; the knowledge on main food groups, minimum acceptable diet, early breast initiation and exclusive breastfeeding, also complementary feeding for children between 6 to 23 months, and this need to be supported while improving the accessibility and affordability on diverse types of food and clean drinking water, as well as improving balanced food preparation capabilities of mothers/ caregivers. Setting mechanism or sustainable way of managing what has been achieved so far, is necessary, and continue helping those women who still avoid the intake of certain food items due to lack of adequate information on nutritive components of these food items, dislike for the food sometimes due to cultural and religious beliefs without forgetting those mothers with low socio-economic status.

5.2 Recommendations

From research, the obtained data enabled us to highlight diversity of factors that are influencing food choices, particularly during pregnancy, lactation and under two years of age “period”. Our recommendations are shown in the below Table 5:

Table 3. Recommended Actions

MOH	<p>-Intensifying, and easing the access to nutritional health information through, Umuganda monthly meeting, churches, health communication sessions from Health centers and Hospitals, in private facilities, social medias, TVs and Radios...</p> <p>- Support and promote particularly male education on nutritional health, to ensure their active participation in the fight against malnutrition and increase awareness regarding the role of each family member towards eating healthy diet, health-services utilization.</p> <p>- Advocate for help, in health institutions to increase qualified nutritionists capable of providing needed help for the community, and ensure their regular trainings.</p> <p>- Intensify teachings and motivations needed to equip pregnant women and lactating mothers with the full basic knowledge on healthy nutrition, food preparation, diversification, complementary feeding, and exclusive breastfeeding.</p> <p>-Sensitize employers in private and public sectors to build a breastfeeding corner, as one way of encouraging and facilitating lactating mothers to complete six months of exclusive breastfeeding. Also set a mechanism allowing casual workers (Nyakabyizi) to have reasonable time of feeding their under two years’ children</p>
MINALOC & MINAGRI	<p>- Insure the sustainability of vegetable gardens, avail a variety of seeds to every household, and provide the needed knowledge on how to sustain its productivity, together with supporting families with small livestock, increasing the access to animal related products as well as obtaining fertilizer.</p>

	<p>- Increase the agricultural productivity to ensure food security; so that people can afford to grow different types of food and even buy them at a reasonable cost, anytime they want.</p>
MINEMA	<p>-Increase advocacy for Governmental support, in increasing effort put in developing Disasters Preparedness and Emergency, Management infrastructures.</p>
MINALOC	<p>-Advocate for counselling sessions for the community; mothers and fathers in the battle of fighting mindset and bad attitudes, reducing family conflicts hindering health nutrition starting from household level. Helping everyone to understand its needed contribution in the welfare of the family and eradicate the old ideology that it is women 's affair.</p> <p>- Advocate for increasing the proportion of households that have access to clean drinking water, in all three visited districts, particularly; Nyabihu District and increase cooperatives and other activities generating revenue for single mothers who are doing prostitution, helping them to obtain a reasonable income therefore educate, encourage them to participate in nutritional education sessions.</p> <p>-Provide support and the establishment of supervised day-care in the urban-rural, helping parents who are taken by the work almost all day hours.</p>
CRS_Gikuriro	<p>-Design and strengthen a knowledge sharing mechanism on nutrition at community level including men, where testimonies can be shared, targeting to encourage and positively influence others who still think that it's not possible to eat a balanced diet regularly. Also, a system at village level to motivate and recognize the effort of role model parents, elected by the population.</p> <p>- Ensure the proper utilization, management and sustainability of different local implementing partners activities and have community based technical teams in each district, who can work as back up team in case the project ends.</p>

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APPENDIX

Table 4. Disapproved Food

DISAPPROVED FOOD FOR		
PREGNANT WOMEN	LACTATING MOTHERS	UNDER 2YEARS CHILDREN
Yams, Cassava, Sweet potatoes, Sugarcane, Alcohol, tobacco, hard food such as pepper/chili sauce, goat meat (in the past), Lamb meat, Garlic, drugs, & energizers, black tea, Coffee, traditional medicine, ...	Yams, Cassava, Sweet potatoes, Cassava flour (Ubugali), Cornmeal (kawunga) and cassava, Dog meat, Snake meat, Pork meat, chili, eggplant (Aubergines), Sorghum beer (Ikigage), water, alcohol, drugs (Urumogi), energizers, cows'breast (meat), black tea, Coffee, tobacco, Nothing disapproved ,...	Yams, Cassava, Sweet potatoes, maize (Impungure), non-chopped beans, pepper or chili, chips, alcohol, Coffee, Tea, Cow milk (for<1 yr), alcohol, meat, nothing disapproved, Sugar, Juice from industries, oil, bread, biscuits, lemonades, unclean water, traditional medicine,...

Table 5. Approved Food

APPROVED FOOD FOR		
PREGNANANT WOMEN	LACTATING MOTHERS	UNDER 2YEARS CHILDERN
Legumes, Irish potatoes, cooked banana, beans, Squash, soft food, meat, fresh fish, beans, peanuts, Fruits; (Pineapple, Tree tomatoes, Passion fruits), beets: (betteraves), regular porridge, milk, eggs, Soja products; Chayote, Grilled sweet potatoes, cassava,...	Pounded cassava leaves (Isombe), Irish potatoes, legumes , meat& soup, fresh fishes, small fishes (Indagara, Isambaza), cooked banana and legumes, Soja products, squash, spinach, chayote, grilled sweet potatoes, fruits, porridge, milk, All food, eggs, sweet potatoes,...	Mashed potatoes, legumes and rice, fresh fish, small fishes, carrot, pepper, cabbage, porridge, milk, boiled eggs, soft food, All food, mashed food, peanuts, beets, carrots, tomatoes, Fruits; banana, passion fruits, Tree tomatoes, porridge of mixed flour, matoke, soft food, oil,...

A. Informed Consent Form

My name is Olive IMANIZABAYO, a student from University of Rwanda, School of Public Health. One of the requirements for the obtaining the degree is to conduct a research project. It is in this context that I am currently conducting a survey with the purpose of assessing **“PERCEIVED DETERMINANTS OF FOOD CHOICES AMONG PREGNANT WOMEN AND LACTATING MOTHERS WITH THEIR UNDER TWO YEARS CHILDREN IN THREE DISTRICTS OF RWANDA: QUALITATIVE STUDY”** This study is supported by the **University of Rwanda, and sponsored by CRS_GIKURIRO Program.**

As, I am giving you the information I would like to invite you to be part of this research. You do not have to decide today whether or not you will participate in the research. Before you decide, you can talk to anyone you feel comfortable with about the research.

This consent form may contain words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, you can ask them of me or of another researcher.)

First of all, I would like to know if you feel interested in taking part in this study. If so, I can let you know that, after all being well explained, and accepted, you'll have to sign this form developed in order to meet the human subject research requirements. Briefly, the consent form states that: (i) all information provided by you during this conversation will be held confidential, (ii) your participation in this study will be voluntary and you have the right to withdraw to the study at any time you feel uncomfortable (iii) there is no harm of any kind of it that will be inflicted on you as a result of taking part in this study (iv) there is no direct benefit to participate in this study.

As, we are assessing perceived determinants that are hindering the reduction of stunting in rural areas of Rwanda, we need to let you know that stunting (chronic malnutrition) is a serious issue that undermine child health and growth development, it is a chock and burden to household and the nation. We want to find out some behaviors that are not leading to its reduction, as we want to help in advocacy, awareness, in so many different ways so that together we can stop it or reduce its prevalence. We believe that you can help, by telling us what you think might be determining food choices, about local belief on dietary diversity and nutritional health practices in general. We want to learn from you; what people who live or work here know about its causes and why some

people take it as serious, others not. We want to know different perceived reasons that influence food choice, before, during, and after pregnancy, during lactating period, and how mothers or caregivers choose food for their under 2 years' children while helping them to grow healthier.

This research will use Key Informant Interviews for local partners and stakeholders of CRS_GIKURIRO, and Focus Group Discussion for pregnant, lactating mothers and caregivers who live or work in the study area.

Researches show that food choice may result in stunting stature which can be acquired in utero, therefore, nutritional status of pregnant women, even before they are pregnant, will affect the growth of the fetus. Besides, undernourished pregnant women are at risk of giving birth to babies with low birth weight, which is the among the main cause of stunting. Furthermore, babies who are inadequately breastfed and with low nutritional care are at risk of contracting various infectious diseases due to poor nutrition and unhygienic diets. Knowing that, during early childhood, Babies' diets determine their growth and this needs adequate and safe sources of micronutrients and macronutrient in a safe environment.

The reason why we mainly focused on pregnant, lactating mothers and encourage them to be involved and participate in this Interview or a group discussion that will take about one hour and one hour a half respectively. But, if at any point during the interview you would like to stop, or if there is any question you would like to not answer, just let me know -- that's fine. You can also take a break at any time.

Before we continue, do you have any questions?

Voluntary Participation

You are free to choose whether or not to participate in this study. Feel free to ask any question before, during, and after the interview. If you would like to withdraw from the study, you can do so at any time by contacting Olive IMANIZABAYO on 0788616135, Mr. Albert NDAGIJIMANA on 0788634428 and Dr. Lawrence RUGEMA on 0788872748 or email us on: izabayo@gmail.com, albert.ndagijimana@gmail.com and lrugema@nursph.org.

The Institution Review Board Committee in the University of Rwanda has reviewed and approved this project. If you have any concerns about your rights in this project, please contact Professor GAHUTU Jean Bosco the Chairperson of Institution Review Board Committee 0783340040.

Benefits of the study

There will be no direct benefit to you, but your participation is likely to help us find out more about how to promote good food choices, dietary diversity and prevent stunting in your community as long as the results of the study will be published to inform policy makers and strengthen advocacy thriving for behavior change and live in the community free from stunting.

Certificate of Consent

- The study has been explained to me in a language that I easily understand. All the questions I had about the study have been clearly answered. I understand what will happen during the interview and what is expected from me.
- I have been informed that it is my right to refuse to take part in the interview today and that if I choose to refuse I do not have to give a reason.
- I have been informed that anything I say during the interview today will remain completely confidential: my name will not be used nor any other information that could be used to identify me unless I choose to be mentioned in the study.
- It has been explained that sometimes the researchers find it helpful to use my own words when writing up the findings of this research.
- I understand that any use of my words would be completely anonymous (without my name unless I want my work to be mentioned). I have been told that I can decide whether I permit my words to be used in this way.
- I do here by voluntarily agree to participate in this study.

Name of Participant _____

Signature of Participant _____

Date _____

Day/month/year

If illiterate

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Print name of witness _____

Thumb print of partic

Signature of witness _____

Date _____

Day/month/year

Statement by the researcher/person taking consent

I have accurately read out the information sheet to the potential participant, and to the best of my ability made sure that the participant understands that the above mentioned steps.

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

A copy of this ICF has been provided to the participant.

Name of Researcher/person taking the consent _____

Signature of Researcher /person taking the consent _____

Date _____

Day/month/year

B. Inyemezabushake/ Ibisobanuro ku bushakashatsi

Tugushimiye kuba wemeye kugira uruhare muri iki kiganiro. Nitwa IMANIZABAYO Olive. Nturutse muri Kaminuza nkuru y'u Rwanda, icyiciro cya gatatu. Turi gukora ubushakashatsi kugirango dusuzume impanvu zitera imyitwarire runaka mu bijyanye n'amahitamo ku mirire, gutegura no kurya indyo yuzuye ikenwe cyane cyane ku bagore batwite, ababyeyi bonsa, n'abana babo bataruzura imyaka ibiri mu bice by'icyaro byo mu Rwanda.

Tuzirikane neza ko igwingira rihera kare umubyeyi agitwite, yonsa ndetse na nyuma yahoo, niyo mpavu kwita ku mboneza mirire, gufata indyo yuzuye, kwita ku bifite intungamubiri, ongera, konsa nibura imyaka 2, isuku mu mitegurire y'ibyo kurya n'iyaho dutuye ari ingenzi cyane mu kurwanya iryo gwingira ridindiza umwana, umuryango muri rusange ndetse n'igihugu.

Twifuzaga kukubaza niba wumva ufite ubushake mu kugira uruhare muri ubu bushakashatsi, ubaye ubyemeye, twakumenyesha ko nyuma yo gusobanurirwa neza uruhare witezweho, n'uburenganzira bwawe, turibuze kugusaba gusinya inyandiko twateguye mu rwego rwo kubahiriza ibisabwa mu bushakashatsi bukorerwa ku bantu. Muri make, iyi nyandiko ivuga ko: (i) amakuru yose uza gutanga muri iki kiganiro agirwa ibanga, (ii) kugira uruhare muri ubu bushakashatsi ni ubushake kandi ufite uburenganzira bwo guhagarika ikiganiro igihe ushakiye mu gihe wakumva utakibyishimiye, (iii) nta ngaruka mbi nimwe izakubaho iturutse ku kuba wagize uruhare muri ubu bushakashatsi.

Dushishikajwe no kwiga, kumenya tubivuye i muzi, ubumenyi, ku mirire, inzitizi mu mibereho ya buri muni, zishobora kuba zituma igabanuka ry'igwingira mu Rwanda, cyane cyane mu bice by'icyaro ritagerwaho.

Mu kiganiro turi bukore, hagati y'abantu 8-10, turaza gufata amajwi y'ikiganiro ndetse tunandike ibivugwa kugirango dushobore gufata ibyo tuza kuganira byose mu rwego rwo kwizera ko nta kiducika. Uramutse wumvise udashaka ko tugufata amajwi, urabivuga, gusa ntibyakuze kugira uruhare mu bushakashatsi.

Mbere y'uko dutangira, nagirango nshimangire ko ibyo turi buganire byose ari ibanga. Nta muntu numwe uzagera ku majwi afatwa muri iki kiganiro cyangwa kubyo twandika ureste twe turimo dukora muri ubu bushakashatsi. Turifuza ko mwamenya ko nta gisubizo kiri cyiza cyangwa kibi, byose bikusanyirijwe hamwe biba ingirakamaro. Mu kwandika ibyavuye mu bushakashatsi, ntabwo tuzakoresha amazina y'abo twaganiriye kugirango hatagira ubamenya.

Tubibutseko, mu gihe wumva ushaka guhagarika ikiganiro igihe icyo ari cyo cyose, biremewe, cyangwa niba hari ibibazo uza kumva udashaka gusubiza, uze kubivuga nta cyo bitwaye rwose. Ushobora gufata akaruhuko igihe cyose ushakiye.

Mbere y'uko dukomeza, hari ibibazo wumva wabaza?

Kwemera ku bushake

Ufite uburenganzira bwo guhitamo kugira uruhare muri ubu bushakashatsi cyangwa kubyanga. Biba byiza wisanzuye mu kubaza ibibazo byose ushaka mbere, hagati, cyangwa nyuma y'ikiganiro. Uramutse wifuje kuva muri ubu bushakashatsi, wabikora igihe cyose ushakiye mu kuduhamagara kuri numero 0788616135, 0788634428 cyangwa se 0788872748 cyangwa ukatwandikira kuri imeyili: izabayo@gmail.com, albert.ndagijimana@gmail.com cyangwa se lrugema@nursph.org.

Komite y'ikigo ishinze kurengera abakorerwaho ubushakashatsi yasuzumye kandi yemeza ubu bushakashatsi. Uramutse ugize impungenge/ibibazo byerekeranye n'uburenganzira bwawe muri ubu bushakashatsi, wahamagara Professor GAHUTU Jean Bosco umuyobozi wa komite y'ikigo gishinze kurengera abakorerwaho ubushakashatsi kuri 0783340040 cyangwa ukamwandikira kuri imeyili: jbgahutu@yahoo.com.

Inyungu/ingaruka z'ubushakashatsi

Ibizava muri ubu bushakashatsi bigamijwe gukoreshwa ubuvugizi ku bijyanye n'ireme ry'ubumenyi ku mirire, tugamije imibereho myiza, kurya indyo yuzuye, kwita ku buzima bw'umubyeyi utwite, uwonsa, tutibagiwe n'abana bataruzuzwa imyaka ibiri mu kurwanya igwingira mu Rwanda.

Inyemezabushake

- Nasobanuriwe ubushakashatsi mu rurimi numva neza. Ibibazo byose nari nfitse birebana n’ubushakashatsi byasubijwe mu buryo bwumvikana. Nsobanukiwe uko ikiganiro kiri bugende n’uruhare rwanjye.
- Namenyeshajwe ko ari uburenganzira bwanjye kwanga kugira uruhare muri iki kiganiro kandi ko niba mpisemo kwanga ntagomba gutanga impamvu, kandi ko bitazahungabanya imibereho yanjye ubu cyangwa mu gihe kizaza.
- Namenyeshajwe ko ikintu cyose nza kuvugira mu kiganiro kizagirwa ibanga rikomeye: izina ryanjye ntirizakoreshwa cyangwa amakuru yose ashobora gukoreshwa mu kumenya keretse mpisemo ko bamvuga mu bushakashatsi.
- Byasobanuwe ko rimwe na rimwe abashakashatsi basanga bifashisha amagambo yanjye bwite mu kwandika ibyavuye muri ubu bushakashatsi. Nsobanukiwe ko mu ikoreshwa ry’amagambo yanjye umwirondoro wanjye utazamenyekana (izina ryanjye rizakurwamo keretse nshatse ko uruhare rwanjye rugaragazwa). Nabwiwe ko nshobora gufata icyemezo cyo kuba natanga uburenganzira bwo gukoresha amagambo yanjye muri ubu buryo.
- Ubu nkaba nemeye ku bushake kugira uruhare muri ubu bushakashatsi.

Umukono w’ubazwa/igikumwe

Italiki:.....

Umukono w’umushakashatsi.....

Italiki:.....

C. Research Tools

C.1. QUESTIONS FOR FGDs AND KKIIs

The designed questions will help to obtain quality data on the types of food eaten or not eaten during pregnancy, lactation and for children under 2 years of age, normative referents, and control factors around food habits and dietary choice during pregnancy, lactating and for <2 children. Therefore, following questions will be used to explore more reason behind current behavior:

Types of food eaten or preferred during pregnancy, lactation and for children under 2 years of age in Rwanda

1. What do you see as the advantages/ disadvantages of eating diverse diet during pregnancy?
2. What do you see as the advantages/ disadvantages of eating diverse diet during lactating and for children <2 years of age?
3. Which idea that comes in mind when you think about eating diverse diet during pregnancy?
4. What else comes to mind when you think about eating diverse diet during lactating period and for children under 2 years of age?

Types of food not eaten/not preferred during pregnancy, lactation and for children under 2 years of age in Rwanda

1. What are the foods that are culturally inappropriate to eat during pregnancy?
2. What are the foods that are culturally appropriate/recommended to eat during pregnancy?
3. What are the foods that are culturally inappropriate to eat during lactating period?
4. What are the foods that are culturally appropriate to eat during lactating period?
5. What are the foods that are culturally inappropriate to give to children under 2 years of age?
6. What are the foods that are culturally appropriate to give to children under 2 years of age?
7. What other food taboos or cultural restrictions you can tell during pregnancy, lactating period and for children under 2 years of age?

Normative referents

When it comes to eating diverse diet during pregnancy, lactating period and for children under 2 years of age, there might be individuals or groups who would think you should or should not perform this behavior.

1. Please list the individuals or groups who would approve or disapprove for you to eat diverse diet during pregnancy, lactating period and for children under 2 years of age,
2. Sometimes, when we are not sure what to do, we try to see what others are doing. Please list the individuals or groups who are most likely to eat diverse diet during pregnancy, lactating period and for children under 2 years of age,
3. Please list the individuals or groups who are least likely to eat diverse diet during pregnancy, lactating period and for children under 2 years of age.

Control

1. Under what circumstances would it be easy or enable you to eat diverse diet during pregnancy, lactating period and for children under 2 years of age
2. What circumstances that would make it difficult or prevent you from to eating diverse diet during pregnancy, lactating period and for children under 2 years of age.

Child nutrition

1. How is the awareness among pregnant, lactating mothers/caregivers about infant feeding (0–6 months)?
2. How is complementary feeding being understood and considered among pregnant, lactating mothers/caregivers about complementary feeding?
3. Why do we encourage early breastfeeding (within 1 hour of birth)?
4. How do understand, exclusive breastfeeding among children under 6 months and why?
5. What do you care about concerning the feeding practices for children aged 6–23 months?
6. Why do we need food items from multiple food groups? What are the barriers of doing it?
7. Are children consuming the minimum dietary diversity? If Yes, how? If No: why?

8. Do children aged 6–23 months receive the minimum meal frequency? If Yes; how? If No; why?
9. What percentage of children aged 6–23 months that receive the minimum acceptable diet?
 Bonus Q: Which areas that need more efforts, in the way of fighting unhealthy feeding among pregnant women, lactating mothers with their children below 23months?

IBIBAZO BY'INGENZI BYO KUGANIRAHO

Ibi bibabzo byateguwe mu rwego rwo kudufasha kubona amakuru ahagije kandi asobanutse ku birebana n'imirire y'abagore batwite, ababyeyi bonsa tutibagiwe n'abana bari muni y'imyaka 2. Indyo bemerewe, iyo batemererwa muri kiriya gihe, impanvu zibatera gufata bimwe ibindi ntibabifate, imitegurire yabyo hakurikijwe umumaro bigirira umubiri. Ni muri urwo rwego tugiye kwifashisha ibi bibazo, tunganira, twungurana ibitekerezo, dusangira ubuhamya ku migenzereze n'amahitamo ku mirire mu gihe cyo gutwita no konsa ndetse n'abana bari muni y'imyaka 2:

A. Amoko Y'Ibiribwa bikundwa kurusha ibindi mu gihe abagore batwite, ku babyeyi bonsa ndetse no ku bana babo hagati y'amezi 6 kugeza 23.

1. Ni izihe nyungu/ingaruka cyangwa Imbogamizi mubona mu bijyanye no kurya indyo yuzuye mu gihe umugore atwite?
2. Ni izihe nyungu/ingaruka cyangwa Imbogamizi mubona mu bijyanye no kurya indyo yuzuye mu gihe umubyeyi yonsa ndetse no ku bana bari muni y'imyaka 2 (amezi 6 - 23)?
3. Ni ikihe gitekerezo gihita kiza mu mutwe iyo bavuze ku bijyanye n'imirire y'indyo yuzuye ku mugore utwite?
4. Ni ikihe kindi gihita kiza mu mutwe iyo bavuze ku bijyanye n'imirire y'indyo yuzuye ku mubyeyi wonsa ndetse ku bana bari muni y'imyaka 2 (amezi 6 - 23)? ?

B. Amoko y'Ibiribwa bikunzwe/bidakunze kuribwa mu gihe umugore atwite, ku mubeyi wonsa, ndetse no ku bana bari muni y'imyaka 2 (amezi 6 - 23).

1. Ni ibihe biribwa byemerewe , abagore batwite, mu mucu nyarwanda?
2. Ni ibihe biribwa byemerewe abagore bonsa, mu mucu nyarwanda?
3. Ni ibihe biribwa bitemewe /bidakwiriye kuribwa, ku ababyeyi batwite, mu mucu nyarwanda?
4. Ni ibihe biribwa bitemewe /bidakwiriye kuribwa, ku ababyeyi bonsa, mu mucu nyarwanda?
5. Ni ibihe biribwa bitemewe /bidakwiriye kugaburirwa, abana bari hagati y'amezi 6 - 23, mu mucu nyarwanda?
6. Ni ibihe biribwa byemewe /bikwiriye kugaburirwa abana bari hagati y'amezi 6 - 23, mu mucu nyarwanda?

C. ABATUBERA URUGERO MU GUFATA IBYEMEZO

Mu gihe umugore atwite cyangwa umubyeyi wonsa, no kwita ku igaburo ry'abana bari muni y'imyaka 2 hari abantu baduha inama, batubera urugero, ndetse badutera gufata ibyemezo mu bijyanye n'ibyo tugomba kurya, ndetse n'ibyo tutagomba kurya.

1. Mwatubwira urutonde rw'abantu / itsinda ry'abantu bashobora kukwemerera cyangwa bakakwangira kurya ibiribwa bitandukanye mu gihe utwite, wonsa, ndetse no ku gaburira umwana uri muni y'imyaka 2?
2. Rimwe na rimwe iyo tudasobanukiwe neza icyo gukora, tugerageza kurebera kubyo abandi bakora. Mwaduha urutonde rw'abantu / itsinda ry'abantu mwaba muzi umuntu yareberaho? Bagerageza kurya indyo yuzuye mu gihe batwite, bonsa ndetse n'igihe bagaburira abana babo bari muni y'imyaka 2?
3. Mwaduha urutonde rw'abantu / itsinda ry'abantu mwaba muzi umuntu atareberaho, kubijyanye no kurya indyo yuzuye? Bari hanyuma y'abandi mu kugira imirire iboneye, indyo yuzuye mu gihe batwite, bonsa ndetse n'igihe bagaburira abana babo bari muni y'imyaka 2?

D.IZINDI MPANVU/ KU MIRIRE IBONEYE

1. Mwatubwira urutonde rw'izindi mpanvu cyangwa ibihe runaka bishobora korohereza umugore utwite, umubyeyi wonsa, kugira imirire iboneye/ indyo yuzuye, ndetse no ku bana babo bari muni y'imyaka 2?
2. Mwatubwira urutonde rw'izindi mpanvu cyangwa ibihe runaka/bidasanzwe bishobora gutuma imirire iboneye/ indyo yuzuye, itagerwaho cyangwa igorana, ku mugore utwite, umubyeyi wonsa, ndetse no ku bana babo bari muni y'imyaka 2?

E. IMIRIRE Y'ABANA BARI MUNSI Y'IMYAKA 2 (Amezi 6-23).

1. Ubumenyi/ ubukangurambaga ku bagore batwite, ababyeyi bonsa bwaba bugeze ku ruhe rugero, mu bijyanye n'imirire y'abana bato (hagati y'amezi 6-23)?
 2. Ese abagore batwite, ababyeyi bonsa bumva bate ibijyanye n'uburyo bwo gutanga imfashabere mu kwita ku mirire y'abana babo (bari hagati y'amezi 6-23)?
 3. Ese mwatubwira impanvu dushishikariza ababyeyi konsa mu gihe gito umwana avutse? (kutarenza isaha imwe umwana avutse ataronka)?
 4. Ese konsa umwana gusa utamuvangira n'ibindi biribwa cyangwa ibinyobwa, ku bana bari muni y'amezi atandatu mubyumva mute? Bimaze iki? Kubera iki bikorwa?
 5. Ese ni ibiki ukwiriye kwitaho mu bijyanye n'imigenzereze, ku mirire iboneye ku bana bari hagati y'amezi 6- 23?
 6. Kuki dukenera ibyo kurya by'amako atandukanye mu kugira imirire iboneye? Ese ni izihe mbogamizi muhura nazo mu kugerageza gutera iyo ntambwe?
 7. Ese abana banyu baba babasha kugaburirwa bike bishoboka nibura ku ndyo yuzuye twavuze, bikenerwa mu kugira indyo yuzuye?
- Niba ari yego; ni gute mubonako byagezweho?
- Niba ari oya; mwaduha impamvu?
8. Ese abana bari hagati y'amezi 6 kugera kuri 23 baba babona ibyo kurya inshuro zingahe ku muni? Bigerwaho gute? Watubwira impanvu zatuma bitagerwaho?

9. Mugereranije, mwatubwira ijanisha ry'abana bari hagati y'amezi 6 na 23, baba babona indyo yuzuye?

Bonus Q/: Mubyo twaganiriye byose mubona ari he hakwiriye gushyirwa imbaraga nyinshi mu gufatanya kurwanya imirire mibi ku bagore batwite, abonsa ndetse n'abana b'amezi 6-23?

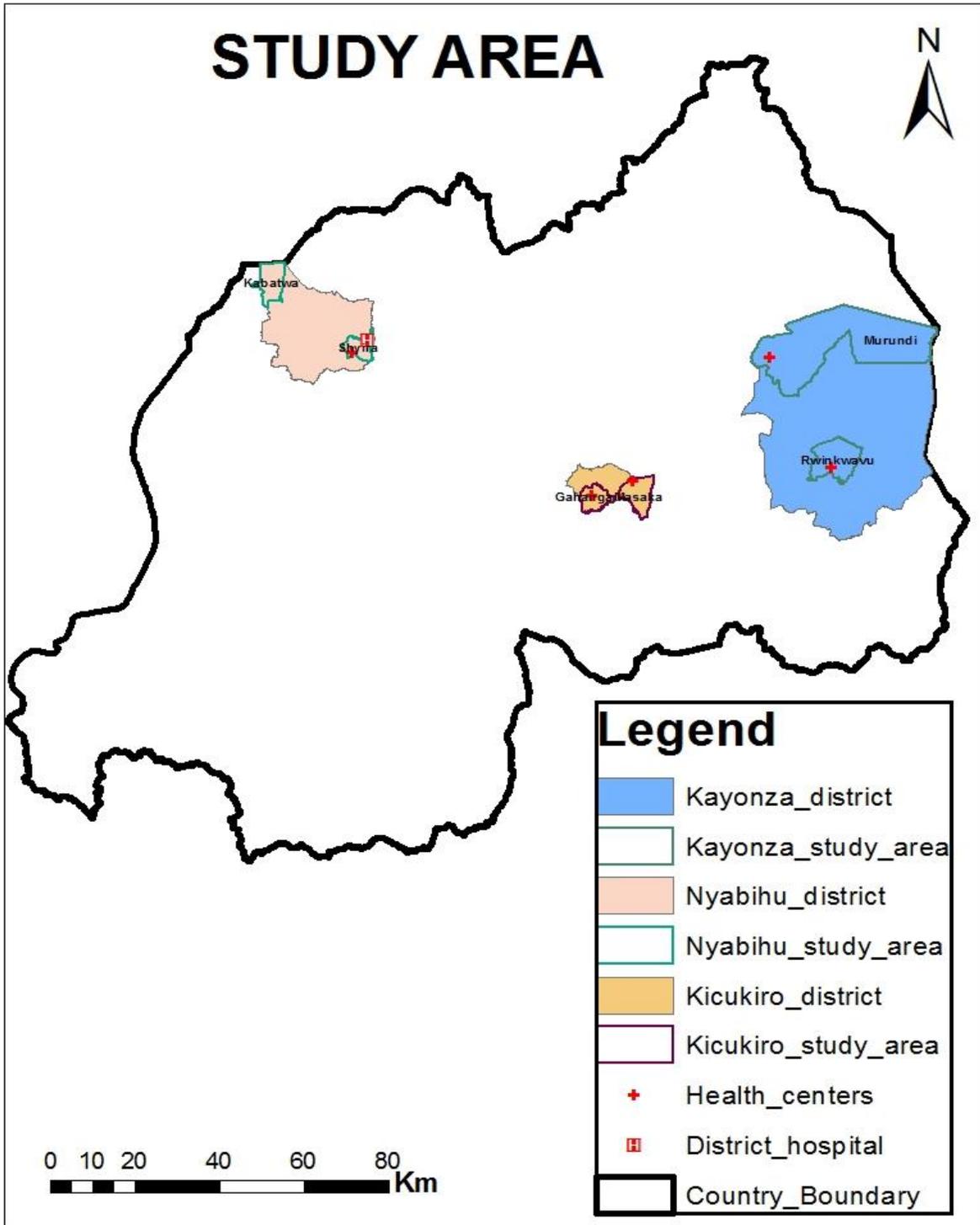


Figure 1: A map of Rwanda showing the districts where the study was conducted.