

## **Assessing the Perceptions of Suckling Mothers towards Locally Prepared Baby Foods in Kenema, Sierra Leone**

**BY:**

**Marion Baby-May Nyakoi**

MSC Nutrition & Dietetics, BSC Nutrition & Dietetics, National Diploma in Catering  
Lecturer in the department of Home Sciences at the Eastern Technical University of Sierra Leone, Kenema Campus.

### **ABSTRACT**

Generally, there is a high level of malnutrition among infants and children especially in Africa. The aim of this study was to examine perceptions of suckling mothers of infants between 6-24 months towards locally prepared baby foods in Sierra Leone. A cross-sectional explanatory study design was used for the study. A total number of 50 suckling mothers of infants between 6-24 months were recruited within Kenema Township and its environs, Kenema District. A structured questionnaire was used for data collection and data was analyzed using descriptive statistics. The results show that suckling mothers were mostly young adults with age ranging from 18 to above 45 years and the majority (55%) were in the range of 18-25 years old, and were married (48%) and practiced the Muslim faith (74.9%). They were noted to have had secondary school education (57.1%) as well as their spouses or partners (35.75%). Fifty percent were housewives and 21.19% of their spouses or partners are either employed or unemployed or self-employed. Majority of suckling mothers have a household monthly income that is below the minimum wage (52.38%) and with two children (45.23%). However, a high awareness level about locally prepared baby food was noted in the study area as 92.9% of suckling mothers have heard about the availability of different local complementary foods for infants. Suckling mothers (78.6%) have knowledge on how to prepare local complementary baby food and 81.0% of them have used locally prepared baby food to feed their infants in the past. They believed some locally prepared baby foods are more nutritious compared to imported baby food. However, availability of ingredients, safety and hygiene, time to cook local baby food, inadequate nutritional contents and the convenience of imported baby food are considered as barriers towards using locally prepared baby food. Findings in this study have implications for the promotion of locally prepared baby foods in combating malnutrition among 6-24 months infants in Sierra Leone.

### **INTRODUCTION**

This chapter covers the background to the study, problem statement, aim and objectives, significance of the study, scope, limitations of the study and definition of key terms. Sierra Leone is not self-sufficient in food production and remains highly dependent on food imports. The country is a net importer of milled rice, leaving poor households extremely vulnerable to international price fluctuations. Sierra Leone National Nutrition Survey (SLNNS), (2017). Nutrition is a crucial component of health promotion. According to the World Health Organization (2003), nutrition is an input to and foundation for health and development. Proper nutrition makes people stronger and more productive. Healthy eating habits lead to a stronger immune system, less illness, and better health. Healthy nutrition is a key to a better quality of life. Improving the nutritional status of Sierra Leoneans is a major goal shared by nutrition educators and governmental officials (Sierra Leone Food and Nutrition Security Policy, 2012-2016; GoSL, 2014).

Malnutrition in the form of under nutrition remains a significant contributor to infant and child morbidity and mortality in Sierra Leone and is attributable to a complex set of factors, such as inadequate food intake and poor choices of food, as well as various underlying factors at the household, community and macro levels. Overall, under nutrition in Sierra Leone is manifested by high levels of stunting, underweight and wasting rates among children under five years old. According to the International Food Policy Research Institute (IFPRI), Sierra Leone with Global Hunger Index (GHI) of 38.3 in 2017 scores among the highest in the global rating of 119 countries with sufficient data, signifying alarming levels (GHI 35-49.9) of hunger (IFPRI, 2017). Addressing under nutrition is never easy due to its complex and multifaceted nature. It is becoming increasingly clear that efforts to end malnutrition require multispectral interventions with strong sectorial coordination. Although the Government of Sierra Leone has made tremendous commitments through the Agenda for Prosperity, under nutrition remains an issue of national concern. The 2017 Sierra Leone National Nutrition Survey (SLNNS, 2017), which offers the most recent data on nutritional status of children under five, indicates that 28.8% are stunted according to the 2006 World Health Organization (WHO) standards, while 12.9% are underweight and 4.7%, wasted.

In Sierra Leone, challenges to reducing malnutrition are well acknowledged and there is an overwhelming body of literature to demonstrate that malnutrition is a major public health challenge. Chronic under nutrition and micronutrient malnutrition remain issues of national concern, while the incidence of overweight, obesity and NCDs are on the increase. The cyclical relationship between under nutrition and infectious diseases is also well recognized. A healthy and well-nourished population is with communities and families that are well informed and empowered to take appropriate actions about their healthy eating patterns.

Looking at stunting and wasting since 2005, it's clear that the country has managed to reduce the rates of stunting and underweight (from very high to medium in 2014) and wasting (from very high and to low). While progress towards reducing stunting and underweight is evident, more needs to be done to achieve the 20% threshold set by WHO and WHA global targets by 2025 to improve maternal, infant and young child nutrition. Micronutrient status remains a major nutritional challenge as shown by data from the Sierra Leone Micronutrient Survey (SLMS, 2015), which was conducted for the first time in the country. Micronutrient deficiency disorders of iron deficiency anaemia, Vitamin A, iodine and folate deficiencies continue to pose public health concerns (Veldsman et al., 2015). The interventions under Feed the Future for nutrition and nutrition-sensitive agriculture programme, identified several vulnerable groups in Sierra Leonean communities and that children 0-59 months, Infant and young child feeding practices (IYCF) in Sierra Leone are generally inadequate. In addition to poor Infant and young child feeding practices, lack of safe drinking water, sanitation and hygiene problems, appropriate knowledge, attitude and nutrition practice of most suckling mothers in their daily duties greatly affect their nutritional status and consequently a risk factor. More so, one of the main causes of nutritional problems is the lack of nutrition knowledge, results in poor practice, which causes serious harms such as malnutrition and various non-communicable diseases. Satisfactory diet, physical activity and nutritional status are recognized as major determinants of health of children. Appropriate complementary feeding promotes growth and prevents stunting among children between 6 and 24 months of age. Infants are particularly vulnerable to malnutrition and infection during the transition period when complementary feeding begins (GoSI/MoHS, 2016).

Generally, most suckling mothers perceived English food such as Nutrilon, Cerelac, Nutrilac, Conrmlac, Fortulac, etc., to be adequate and effective in provide all the essential nutrients in their correct proportion. However, most of these feeding stuffs are expensive. On the other hand, a Sound and culturally appropriate nutrition counseling should be given to mothers of young children so that they can make the widest possible

use of indigenous, locally available foods which are safely prepared and fed in the home. The agriculture sector has a particularly important role to play in ensuring that suitable foods for use in complementary feeding are produced, readily available and affordable (Veldsman et al., 2015). When replacement feeding is Affordable, Feasible, Acceptable, Sustainable and Safe (AFASS), it promotes healthy growth of children. Research shows however that good infant feeding counseling and support, provided by health care staff or peers, can improve the rates replacement feeding. The study therefore examines the perceptions of suckling mothers of infants between 6-24 Months toward Locally Prepared Baby Foods in Sierra Leone.

## PROBLEM STATEMENT

The National Nutrition Survey (NNS, 2017) assessed the severity and geographical distribution of contextual factors associated with malnutrition. The study findings provide the platform for policy and strategy development to prioritize the programs for short, medium and long-term direct and indirect interventions at the national and district level. According to the NNS (2014), the national prevalence of global acute malnutrition (GAM) was 4.7% (4.3 – 5.2 95% CI) and the severe acute malnutrition (SAM) rate was 1% (0.9 – 1.2 95% CI). These results indicate “acceptable” acute nutrition situation based on WHO classification for severity levels of acute malnutrition. The report however stated that Stunting rate was still moderately high at 28.8% (27.5 – 30.2 95% CI). The report also revealed that some districts reported GAM rates above 5% threshold indicating nutrition situation at Poor levels according to WHO classification; these were Pujehun (5.0%), Moyamba (5.0%), Kenema (5.5%), Port Loko (5.5%), and Tonkolili (6.6%)(NNS, 2017).

The rates of stunting varied by district with half of the districts reporting rates above the high level of >30% such as Kono (30.1%), Port Loko (32.2%), Bombali (33.3%), Moyamba (34.5%), Kenema (39.6%), Pujehun (41.0%) and Tonkolili (41.2%)(NNS, 2017). The study revealed that most respondents were nutritionally underweight. This is likely due to either access to balance diet or inadequate nutritional knowledge about their food choice. It is recommended that nutrition educators and health service providers embark on effective sensitization on nutrition and related issues in order to improve on the nutritional status in the study areas.

Regardless of how protracted or short the period of risk is, in virtually all populations in which growth is constrained the period of greatest vulnerability is the second semester of life (6 to 12 months of age) and well into the second year (until 18 months of age and often longer). It begins when maternal milk is no longer adequate to supply all of the child’s needs and continues until he or she is able to meet the nutritional requirements through consumption of the usual family diet and requires no special assistance with eating. With respect to how to feed: ensure that feeding utensils are available and clean; ensure that sanitary conditions are maintained in the preparation and storage of food; pay attention to how much the child is eating and ensure that the intake is adequate. With respect to when to feed: ensure that food is fed frequently enough during the course of the day to meet the young child’s nutritional needs, given his/her limited gastric capacity and the nutrient density of the complementary foods.

The fundamental principles of psychosocial care include accurately perceiving and interpreting the child’s signals, responding adequately and promptly; with respect to where to feed - ensure that the eating environment is clean; and with respect to who does the feeding - ensure that the caregiver is knowledgeable and experienced. Despite many nutritional studies that have been conducted in Sierra Leone, little is known about the perceptions of suckling mothers of infants between 6-24 months toward locally prepared baby foods. More importantly, literatures have revealed that little is known about perceptions of suckling mother toward locally prepared baby foods for infants between 6-24 months in Sierra Leone. The purpose of this study, therefore, is to provide relevant information for practical and policy formulation on how to

appropriately formulate locally prepared baby food in order to mitigate malnutrition that is already prevalent among children in two.

#### **AIM OF THE STUDY**

The purpose of the study was to examine perceptions of suckling mothers of infants between 6-24 months toward locally prepared baby foods in Sierra Leone.

#### **OBJECTIVES OF THE STUDY**

The specific objectives of the study are as follows:

- I. To generate information on the general characteristic of suckling mothers in Kenema town
- II. To assess the knowledge of suckling mothers on locally prepared baby food in Kenema town
- III. To analyze the perceived attribute and preference over locally prepared baby food among suckling mothers
- IV. To find out the perceived barriers to consuming locally prepared baby food for infants.

#### **1.6 SIGNIFICANCE OF THE STUDY**

The study was aimed at examining the perceptions of suckling mothers of infants between 6-24 months toward locally prepared baby foods in Sierra Leone. The study findings showed that suckling mothers are knowledgeable about locally prepared baby foods and they believed it is more nutritious than some imported baby foods. However, the study also identified barriers to towards using locally prepared baby foods in Kenema town and therefore, the findings of this study will help nutrition workers and suckling mothers to design strategies on how to appropriately and safely formulate locally prepared baby food in order to mitigate malnutrition that is already prevalent among children in the country (IFPRI, 2017; SMART Survey, 2010, 2014). The findings of the study have also described the present knowledge gap in nutritional information access and use in Kenema town, which needs the attention of health and nutrition's stakeholders in the Government, NGOs, both private and public sectors, and other actors to understand the relationship between nutrition education/information and nutritional practices. It will also serve as a reference material for any person(s) who may want to conduct a similar research. The findings and recommendations of this study will be beneficial to policy makers, planners, donors and the Ministry of Health and Sanitation (MoHS) especially the nutrition office in Freetown. Besides, other ministries such as the Ministry of Gender Affairs and other bodies like UNICEF, WHO in their pursuit to eradicate malnutrition among children will find this research paper very useful. In fact, the study would help avoid duplication of efforts and/or programs, which would in turn lead to the judicious use of resources and eventual savings.

#### **THE SCOPE OF THE STUDY**

Studies conducted in Sierra Leone have shown that there is a high prevalence of health and nutrition problem such as food insecurity, hunger, unsafe drinking water, and malnutrition affecting various categories of the population such as under-five children (NNS, 2017). These are issues that have presented major development challenges among a large percentage of households in rural Sierra Leone and it is a very crucial aspect of nutritional needs across the population especially for children between 6-24 Months. Due to the diverse group of people that are affected with this acute nutrition problem, the study therefore covers mothers of infants between 6-24 months, Kenema Township, Kenema District. Other categories of people such as infants, under 6 months, pregnant women etc., did not form part of this survey because the researcher wanted to manage a sizable number of respondents to accomplish the study within the stipulated timeline.

#### **LIMITATIONS TO THE STUDY**

Throughout the course of this study, the researcher encountered so many constraints that limited the entire study. Such constraints include the time allocated for the research exercise was somewhat limited; coupled with other challenges that surrounded the researcher course work. Secondly, availability of adequate financial and other resources was also another huge constraint. As a student, the researcher found it difficult to generate funds to support the research work in the chosen area. However, the researcher was able to raise some funds to make the work a success. Thirdly, the field data collection was very technical and rigorous including questionnaire administration. The process slowdown the field data collection thereby extending beyond the targeted period.

Lastly, most of the suckling mothers, in most cases, were busy with other engagements and therefore, it was very difficult to agree on time for data collection, particularly, when most respondents visited were busy doing other engagements. The researcher had to trace them several times in the homes or at their business location to facilitate data collection. In addition, most of the respondents found it difficult to disclose certain information regarding their nutritional and health issues but the researcher had to cajole them in order to accomplish the process. Most importantly, Covid-19 pandemic restrictions did not allow the researcher to reach the intended number of respondents in the study area. A total of 50 respondents were recruited as the study participants.

#### DEFINITION OF KEY TERMS

**Barriers:** Refers to are something (such as a fence or natural obstacle) that prevents or blocks movement from one place to another and can include a law, rule, problem, difficulties etc., that makes something difficult or impossible to be undertaken or carried out. Barriers are something that makes it difficult for people to understand each other or embark of doing something because of challenges or difficulties.

**Complementary feeding:** World Health Organization (WHO) defines complementary feeding “as the process starting when breast milk alone is no longer sufficient to meet the nutritional requirements of infants and therefore other foods and liquids are needed, along with breast milk”. Complementary feeding is thus the transition period from exclusive breastfeeding to the family diet. Essentially, it is giving foods (complementary foods) in addition to breast milk to young children, recommended to start at the age of 6 months.

**Imported baby food:** Refers to any soft, easily consumed food other than breastmilk or infant formula that is made specifically for human babies between four and six months and two years old. The food comes in many varieties and flavors that are purchased ready-made from producers, or it may be table food eaten by the family that has been mashed or otherwise broken down. In most cases, they imported from outside the country with brand names such as Nutrilion, Cerelac, Nutrilac, Cornmilk, Fortulac, etc.

**Knowledge:** is a familiarity, awareness, or understanding of someone or something, such as facts, skills, or objects. By most accounts, knowledge can be acquired in many different ways and from many sources, including but not limited to perception, reason, memory, testimony, scientific inquiry, education, and practice.

**Local baby food:** Locally prepared baby foods are defined as foods available in the household and/or market and consumed by the child, which may or may not include fortified foods, such as fortified cooking oil or fortified commercial infant foods. The nutrients in local baby food are sourced from locally available ingredients in local markets.

**Macronutrients:** The components of the diet (carbohydrates, proteins and fats) needed by the body in large amounts for normal physiological function, measured in grams.

**Malnutrition:** Refers to lack of sufficient nutrients in the body, malnutrition occurs when the body doesn't get enough of proper nutrition, caused by not having enough to eat, not eating enough of the right things, or being unable to use the food that one does eat enough nutrients. Causes include a poor diet, digestive conditions or another disease. Symptoms are fatigue, dizziness and weight loss. Untreated malnutrition can cause physical or mental disability. Treatment must address any underlying conditions and replace missing nutrients.

**Micronutrients:** are one of the major groups of nutrients the human body needs. They include vitamins and minerals. Vitamins are necessary for energy production, immune function, blood clotting and other functions. Meanwhile, minerals play an important role in growth, bone health, fluid balance and several other processes.

**Nutrition:** Refers to how a substance in food or diet affects the physiological functioning of the body in relation to maintenance, growth, reproduction, health and disease of an organism. The diet of an organism is what it eats, which is largely determined by the availability and palatability of its nutrients. For humans, a healthy diet includes preparation of food and storage methods that preserve nutrients from oxidation, heat or leaching, and that reduces risk of foodborne illnesses. The seven major classes of human nutrients are carbohydrates, fats, fiber, minerals, proteins, vitamins, and water. Nutrients can be grouped as either macronutrients or micronutrients (needed in small quantities). In humans, an unhealthy diet can cause deficiency-related diseases such as blindness, anemia, scurvy, preterm birth, stillbirth and cretinism, or nutrient excess health-threatening conditions such as obesity and metabolic syndrome; and such common chronic systemic diseases as cardiovascular disease, diabetes, and osteoporosis. Under nutrition can lead to wasting in acute cases, and the stunting of marasmus in chronic cases of malnutrition.

**Preference:** is a technical term usually used in relation to choosing between alternatives. For example, someone prefers A over B if they would rather choose A than B. Preference can also be used in insolvency terms.

**Stunting:** Low height-for-age, reflecting a sustained past episode or episodes of inadequate food intake.

**Suckling Mothers:** Refers to breastfeeding mothers. They are women who after giving birth to a baby uses their breast milk to feed the baby for a period of zero to six months (Exclusive breastfeeding) including those who breastfeed up to a period of two years before child weaning using complementary food.

**Undernutrition:** The outcome of insufficient food intake and/or repeated infectious disease. It includes being underweight for one's age, too short for one's age (stunted), dangerously thin for one's height (wasted) and deficient in vitamins and minerals (micronutrient malnutrition).

**Underweight:** An underweight child is a child whose body weight is considered too low to be healthy.

**Wasting:** This is a type of undernutrition, children or adults will have a low weight-for-height; generally, the result of weight loss associated with a recent period of acute food deprivation, prolonged hunger or disease.

## **LITERATURE REVIEW**

This chapter reviews of literature that are relevant to the study. The literatures are organized using the conceptual framework of perceived views of suckling mothers of infants between 6-24 months toward locally prepared baby foods in Sierra Leone; overview of nutrition status of infants between 6-24 months in Sierra Leone; knowledge of mothers on preparation of locally prepared baby food and importance of breastfeeding.

## **2.2 Overview of Nutrition Status of Infants between 6-24 Months in Sierra Leone**

Acceptable and appropriate nutrition is the foundation for optimal health and development of infants between 6-24 months including children and adults. More than ever, it is becoming increasingly important to undertake sustained and effective actions that will reduce malnutrition among infants between 6-24 months in Sierra Leone through coherent nutrition-sensitive interventions. In this regard, the government of Sierra Leone has developed the National Food-Based Dietary Guidelines (NFBDGs) in a bid to achieving improved nutritional status in the country and the guidelines is considered as a critical part of national efforts to end malnutrition especially among infants between 6-24 months.

Malnutrition in the form of under nutrition remains a significant contributor to infant and child morbidity and mortality in Sierra Leone and is attributable to a complex set of factors, such as inadequate food intake and poor choices of food, as well as various underlying factors at the household, community and macro levels. Overall, under nutrition in Sierra Leone is manifested by high levels of stunting, underweight and wasting rates among children under five years old. Although the Government of Sierra Leone has made tremendous commitments through the Agenda for Prosperity, under nutrition remains an issue of national concern. The 2014 Sierra Leone National Nutrition Survey (SLNS) Sierra Leone National Nutrition Survey (2014), which offers the most recent data on nutritional status of children under five, indicates that 28.8% are stunted according to the 2006 World Health Organization (WHO) standards, while 12.9% are underweight and 4.7% wasted.

Looking at stunting and wasting since 2005, it's clear that the country has managed to reduce the rates of stunting and underweight (from very high to medium in 2014) and wasting (from very high and to low). While progress towards reducing stunting and underweight is evident, more needs to be done to achieve the 20% threshold set by WHO and WHA global targets by 2025 to improve maternal, infant and young child nutrition ([http://www.who.int/nutrition/topics/global\\_targets\\_policy\\_brief\\_overview.pdf](http://www.who.int/nutrition/topics/global_targets_policy_brief_overview.pdf)). Micronutrient status remains a major nutritional challenge as shown by data from the Sierra Leone Micronutrient Survey (SLMS, 2015), which was conducted for the first time in the country. Micronutrient deficiency disorders of iron deficiency anemia, Vitamin A, iodine and foliate deficiencies continue to pose public health concerns.

To circumvent some of these health concerns, mothers of children 6 – 23 months have resorted to complementary feeding in which they feed a diverse diet to their children containing foods from at least 4 of the 7 food groups per day to assess this behavior and growth. Complementary feeding is the transition from exclusive breastfeeding to solid or semi-solid food covering the period from 6-24 months. To meet evolving nutritional requirements of the developing child during this period, minimum dietary diversity requires children receive foods from 4 or more of the 7 food groups such as the following:

- a) Grains, roots and tubers;
- b) Legumes and nuts;
- c) Dairy products;
- d) Flesh foods;
- e) Eggs;
- f) Vitamin-A-rich fruits and vegetables;
- g) Other fruits and vegetables. Dietary diversity is positively associated with mean micronutrient density adequacy and nutritional status.

## **Locally Prepared Baby Foods in Sierra Leone.**

In Sierra Leone, baby foods are locally prepared in different ways and they have different names. The list of the locally prepared baby foods includes Rice, Sesame seeds (locally known as Benni herein referred to as Benni Mix), Parboiled rice, Potato, Ripe plantain, dry plantain flour, and pumpkin porridge. Each of these food items can be combined and fortified with other ingredients available in local markets. Majority of these foods are planted in the rural areas of the country and harvested. They are later sold in markets in different towns and cities. Sometimes, these food items are planted in backyard gardening for personal uses. However, some of these food items scarce in local markets because they are seasonal crops. Unfortunately, in Sierra Leone, there is lack of technologies for preservation of food stuffs especially fresh vegetables. When seasonal crops used for preparation of local baby food are not available in markets, this leads to constrain and a problem for the suckling mothers, which leads them to prefer imported baby foods (Sierra Leone Food Based Dietary Guideline for Healthy Eating, 2016). In Sierra Leone, the combinations of locally prepared baby food include the following:

- I. Rice +Benni mix is a combination of different ingredients (Fish, Rice, groundnut, Sesame seeds (Benni mix), Groundnut, Salt, Maggie, little drop of palm oil, and broad beans). The rice, groundnut, broad beans and Sesame seeds are soaked and washed separately, and sun dried later toasted for pounding. Normally, smoked fish is used and it is also pounded into flour. All of these food items are pounded separately. The pounded flour of rice, broad beans, Sesame seeds and groundnut has to be toasted before addition of the other ingredients one after the other. With all the food items together, pounding is done to make a very nice mixture. The mixture is then stored in a clean container to be cooked as porridge for the baby.
- II. Parboiled rice, this just a combination of rice, salt, smoke fish and palm oil. Firstly, the rice is soaked and washed thoroughly, boiled with little water and later, salt and palm oil are added to cook as porridge.
- III. Potato + Bennimix is a combination of Potato, Sesame seeds, salt, fish etc. The skin of the potato is firstly peeled off and the potato chopped into smaller pieces, washed and sun dried for few days. The other ingredients like Sesame seeds and fish are also processed and pounded separately as explained above. At the end, all of the pounded items are blended together just like explained above for the Rice + Benni mix combination.
- IV. Ripe plantain is just the ripe plantain itself washed and chopped into pieces and boiled. The boiled plantain is mashed and mixed with boiled eggs, butter and a little salt.
- V. Dry plantain flour is cook as porridge and sometimes milk is added to it before feeding the child.
- VI. Pumpkin porridge. Fresh Pumpkin vegetables are washed thoroughly, halved and peeled. The peeled Pumpkin slices are chopped into small pieces and boiled. The boiled pieces are mashed and a drop of palm oil, a pinch of salt and sometimes Maggie are added for palatability and taste.

## **Breastfeeding**

Breastfeeding, also called nursing, is the process of feeding a mother's breast milk to her infant, either directly from the breast or by expressing (pumping out) the milk from the breast and bottle-feeding it to the infant. The World Health Organization (WHO) (2013) recommends that breastfeeding begin within the first hour of a baby's life and continue as often and as much as the baby wants. During the first few weeks of life babies may nurse roughly every two to three hours, and the duration of a feeding is usually ten to fifteen minutes on each breast. Older children feed less often. Mothers may pump milk so that it can be used later when breastfeeding is not possible. Breastfeeding has a number of benefits to both mother and baby,



which infant formula lacks. Increased breastfeeding globally could prevent approximately 820,000 deaths of children under the age of five annually. Breastfeeding decreases the risk of respiratory tract infections and diarrhea for the baby, both in developing and developed countries. Other benefits include lower risks of asthma, food allergies, and type 1 diabetes. Breastfeeding may also improve cognitive development and decrease the risk of obesity in adulthood. Mothers may feel pressure to breastfeed, but in the developed world children generally grow up normally when bottle fed with formula.

### **Benefit of breastfeeding**

Benefits for the mother include less blood loss following delivery, better uterus contraction, and decreased postpartum depression. Breastfeeding delays the return of menstruation and fertility, a phenomenon known as locational amenorrhea. Long-term benefits for the mother include decreased risk of breast cancer, cardiovascular disease, and rheumatoid arthritis. Breastfeeding is also less expensive than infant formula. Health organizations, including the WHO, recommend breastfeeding exclusively for six months. This means that no other foods or drinks, other than possibly vitamin D, are typically given. After the introduction of foods at six months of age, recommendations include continued breastfeeding until one to two years of age or more. Globally, about 38% of infants are exclusively breastfed during their first six months of life. In the United States in 2015, 83% of women begin breastfeeding, but at 6 months only 58% were still breastfeeding with 25% exclusively breastfeeding. Medical conditions that do not allow breastfeeding are rare. Mothers who take certain recreational drugs and medications should not breastfeed. Smoking tobacco and consuming limited amounts of alcohol and/or coffee are not reasons to avoid breastfeeding.

### **Characteristics of breast milk**

Human milk contains 0.8% to 0.9% protein, 4.5% fat, 7.1% carbohydrates, and 0.2% ash (minerals). Carbohydrates are mainly lactose; several lactose-based oligosaccharides have been identified as minor components.

### **WHO guideline for breastfeeding**

World Health Organization also recommends exclusive breastfeeding up to 6 months of age with continued breastfeeding along with appropriate complementary foods up to 2 years of age or longer. Mothers should be encouraged to breastfeed their children for at least 1 year. Executive summary of all preventative health and nutrition interventions, infant and young child feeding (IYCF) has the single greatest potential impact on child survival. Exclusive breastfeeding for the first six months of life and critically in the first hour are essential to enabling this impact. It is estimated that 1.45m lives are lost through giving the wrong food in the first hour of life (WHO, 2013). A number of influences affect a mother's choice of feeding her child in its first stages of life. These may include traditional cultural practices, violations of the International Code of Marketing of Breastmilk Substitutes and subsequent relevant resolutions (the Code), or a mother's working environment. The survey conducted by Save the Children, with support from the Ministry of Health and Sanitation sought to determine which influencing factors play the greatest role and from where they originate. The survey targeted two main groups: (1) households with children aged 0 to 6 months; and (2) health professionals at facility level. The sample size for this survey was 200 and spanned the four regions of Sierra Leone. The survey found that the two main factors that influence a mother's choice of feeding options for her infant include traditional myths about breast feeding, and the availability and easy access to breast milk substitutes. Of these two factors, the aggressive marketing and promotion of breast milk substitutes was identified as an important factor in a mother's decision to introduce additional foods to their infant's diet as early as the first month of life. It was concluded that, in addition to the strong traditional beliefs and common myths about breast feeding, the aggressive marketing of breast milk substitutes has led to an increase in the use of these substitutes by mothers across Sierra Leone. Tradition dictates that infants be given plain water mixed with local foods at the fourth month, this could be one of the reasons why the use of

infant formula is on the rise as it is used to improve the flavor and taste of such diets. The survey identified a strong correlation between the sale of breast milk substitutes and corresponding promotion via radio and television. It is imperative that Parliament adopt the International Code of Marketing of Breast-milk Substitutes into national legislation to protect and promote breastfeeding. The code stipulates that there should be absolutely no promotion of breastmilk substitutes, bottles and teats to the general public; that neither health facilities nor health professionals should have a role in promoting breastmilk substitutes; and that free samples should not be provided to pregnant women and new mothers.

Recommendations:

- a) GoSL must adopt the International Code of Marketing of Breast-milk Substitutes into law;
- b) GoSL must ensure that the Code is properly implemented and supported by enforcement, dissemination and monitoring;
- c) GoSL must consider how work conditions for women can be made more conducive to exclusive breastfeeding, and maternity leave further extended;
- d) GoSL must consider regulation of the repackaging and sale of breast milk substitutes.
- e) The issue of mixed feeding should be investigated and discouraged through sensitization programmes at community level. 1.45m lives are lost globally through giving the wrong food in the first hour of life. 62.5% of women surveyed in Sierra Leone were using breast-milk substitution.

#### RSEARCH METHODOLOGY

## **Introduction**

This chapter contains the methodology employed in conducting the study. It comprises the research design, description of the study area, population and sample size, sampling techniques, sources of data, research instrument, data collection procedure and data analysis.

## **Description of the Study Area**

The study was conducted in Kenema Township, Kenema District. Kenema is the third largest city in Sierra Leone (after Freetown and Bo), and the largest city in the country's Eastern Province. It is the capital of Kenema District and a major economic center of the Eastern Province. At the 2015 national census, Kenema had a population of 200,354. The district is located approximately 200 miles from Freetown, and 60 kilometers (40 mi) south of Bo (Fig. 3.1). The city is one of Sierra Leone's most ethnically diverse cities. The city is home to all of the country's ethnic groups, though the Mende people make up the largest ethnic group. Like most parts of Sierra Leone, the Krio language is by far the most widely spoken language in the city.

As in the rest of Sierra Leone, Kenema has an education system with six years of primary school (Class 1-6), and six years of secondary school (Form 6-12); secondary schools are further divided into Junior secondary school (Form 1-3) and Senior secondary school (Form 4-6). Primary schools usually start from ages 6 to 12, and secondary schools usually start from ages 13 to 18. Primary Education is free and compulsory in government-sponsored public schools. Prominent schools in Kenema include the Kenema Government Secondary School (GSSK), The Holy Trinity Secondary School, Ahmadiyya Secondary School, Holy Rosary Secondary School, Islamic Secondary School, and the Kamboi Lebanese International School. The Eastern Polytechnic situated at the main Combema Road is the highest learning institution in the city, offering certificates and degree courses.

Kenema city is governed by a directly elected city council, headed by a mayor in whom executive authority is vested, and who is responsible for the city's general management. The mayor and council members are elected every four years. Kenema's current mayor is Mr. Thomas KarimuBaion of the Sierra Leone People's Party. Mr. Baion was elected mayor with 79.4% of the vote in the 2018 Kenema Mayoral election. Kenema is an overwhelming political stronghold of the Sierra Leone People's Party, the current national ruling party in Sierra Leone.

Kenema's growth was originally promoted by the logging and carpentry industries, which were linked to the city by the now-closed railway. Since then, its economy has benefited from the diamond mines first discovered in the area in 1931.

In 2014, Kenema experienced an Ebola outbreak and it was the first place in Sierra Leone to report Ebola. Kenema and Bo are endemic areas for a highly contagious tropical hemorrhagic fever known as Lassa fever. The Kenema Government Hospital is the centre of an international effort to combat the disease with support from the World Health Organization (WHO) and UNAMSIL. New laboratories to improve rapid diagnosis are being installed at the hospital, which admits between 250 and 500 suspected cases per year. In 2020, the World Health Organization secured a €500,000 grant from the German Corporation for International Cooperation to increase COVID-19 testing capacity in Sierra Leone, which was already taking place at the Kenema Government Hospital. Response to COVID-19 at the hospital is challenging, because of shortfalls in protective gear for workers and due to labor strikes by hospital workers who have not received salary.

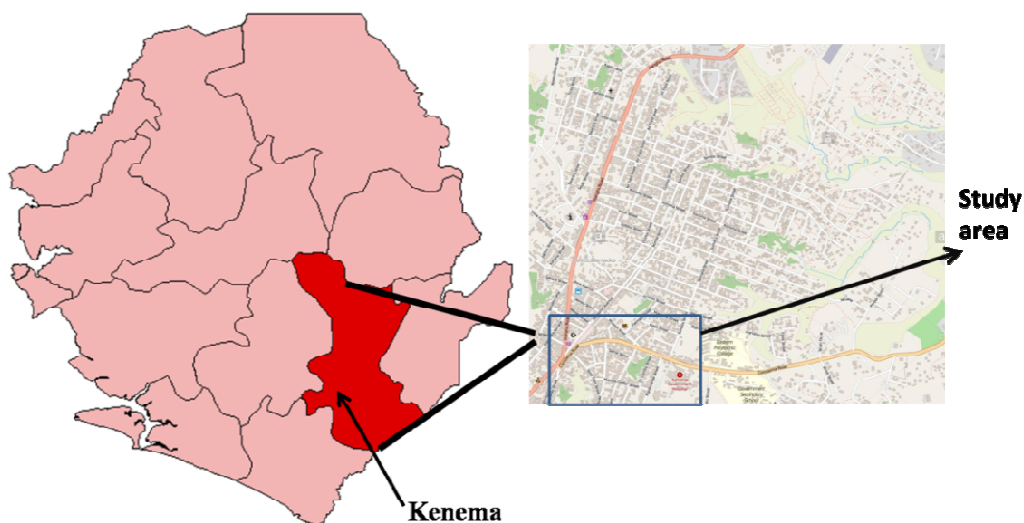


Figure 3.1 Map of Kenema district showing study area in Kenema Township (Sourced from Google Map).

## Research Design

A cross-sectional explanatory study design was used for the study. The design comprises both an exploratory and descriptive type of survey. This research used a quantitative design approach. The research is cross-sectional which allowed the researcher to collect data from respondents once during the survey period. It further allowed systematic collection of data and comparisons from the perceived view of suckling mothers of infants between 6-24 Months toward Locally Prepared Baby Foods in Sierra Leone. The most widely used method in social science is cross-sectional studies, also known as one-shot or status studies. It is best suited for research to assess incidence of a condition (suckling mothers' perceptions toward locally prepared baby

foods), problem, attitude or question by taking a cross-section of the population (Kumar, 2019). The quantitative part was consistent with investigating suckling mothers' perceptions toward locally prepared baby foods in Kenema Township, Kenema District, Sierra Leone.

### **Population and Sample Size**

The population of the survey includes a cross-section of suckling mothers of infants between 6-24 months within Kenema Township and its environs, Kenema District, Eastern Province of Sierra Leone. A total number of 50 suckling mothers of infants between 6-24 months were sampled in the study area. This sample size was considered appropriate for the study due to the restrictions and regulations imposed by NaCOVERC regarding the Covid-19 pandemic in the country.

### **Inclusion and exclusion criteria for respondents**

In this study, criteria were used for the selection and exclusion of respondents. Criteria for inclusion are a gathering of predefined conditions used to categorize subjects for inclusion in a research study. Inclusion criteria, together with exclusion criteria, constitute the selection or eligibility criteria used to determine the target population for a study (Brink et al., 2018). Inclusion criteria should respond to the scientific objective of the study and are critical to accomplishing it. Inclusion criteria or qualification attributes for the examination included suckling mothers of infants between 6-24 months currently resident in the study area and ready to partake in the investigation.

### **Sampling Techniques**

The researcher employed both probability and Non-probability sampling technique in collecting data. First, the researcher ascertained demographic information on suckling mothers of infants between 6-24 months from the under-five record books in the Kenema government hospital and the surrounding PHUs. Secondly, the researcher identified the respondent's household locations through the help of the assistant researcher who was a resident of that community. A mix method of both convenient and cluster sampling techniques was employed to collect data from suckling mothers of infants between 6-24 months in the study area. This approach was adopted because of the Covid-19 pandemic restrictions and regulations in town.

#### **Sources of Data**

The field data was collected using structured questionnaire administered to the respondent. The completed questionnaire was returned to the researcher in the field. In addition, personal observation and interaction with the respondents were also part of the field data collection process. On the other hand, the researcher reviewed journal articles, published and unpublished dissertations or thesis, public documents and reports that were related to the study.

### **Research Instrument**

The instrument for data collection was a well-structured questionnaire (Appendix A). The questionnaire was drafted in English and sectioned based on the research objectives so that the instruments could address the research questions adequately and bring out the desired results. The structured questionnaires were sectioned as follows; (a) General characteristic of suckling mothers, (b) Knowledge of mothers on locally prepared baby food, (c) Perceived attribute and preference over baby food among suckling mothers and (d) Perceived Barriers to consuming locally prepared baby food for infants. The questionnaire was administered face-to-

face to the respondents. To determine the consistency of the measuring instrument, only the researcher administered the questionnaire during the field data collection. This confirmed the consistency of the data collected. In addition, the reliability of the measuring instrument was addressed by pre-testing the instrument with responses from five (5) suckling mothers in study area. The pre-testing (pilot study) assisted the researcher to identify anomalies and make the necessary adjustments. Further, the opinions of experts in topic including the supervisor of the research were sought to ensure internal consistency of the instrument. Cronbach's alpha coefficient was utilized to evaluate the inward consistency of the instrument. It is the measurable methodology utilized for computing inward consistency for interim and proportion level information. The reliability coefficient is basically the mean of the between thing relationships and can be determined using the SPSS. A reliability of 0.70 is viewed as adequate for generally new scales as the scale is being refined and utilized with an assortment of tests (Grove et al., 2014).

Table 3.1 Cronbach alphas for sections of the structured interview schedule

Questions	Number of items	Cronbach alpha
Q1-10	10	0.704
Q11-16	6	0.703
Q17-21	5	0.712
Q22-27	6	0.675

### **Data Collection Method**

The data collection was done using a structured questionnaire. During the field data collection, the researcher first identified the suckling mothers of infants between 6-24 months residing in the Kenema Township and the surrounding environs in the Kenema districts. Thereafter, the data collection process included a face-to-face administration of the questionnaire to the respondents by the researcher in the study area.

### **Data Analysis**

The researcher followed the quantitative data analysis approach to analyse data. Analysis of quantitative data is the systematic manipulation of numerical data by statistical methods to explain the phenomena being studied (Grove et al. 2014). The responses to close-ended items on the structured interview schedule were coded and analyzed using descriptive statistics using Statistical Package for Social Sciences (SPSS, version 16.0) statistical software package. Descriptive data were presented as frequency distribution tables (in percentages), bar and pie charts. This helped to describe and summaries the data and to provide a pictorial view of the distribution of the study's results in the following chapter.

## **PRESENTATION AND DISCUSSION OF RESULTS**

### **Introduction**

Chapter three presented the methodology of the study including a description of the study area, the target population, sampling and data collection process of the study. It also presented how data was analyzed during the study and measures of ensuring reliability and validity of measuring instrument. The results of the study are presented in this chapter.

The purpose of the study was to examine suckling mothers' perceptions toward locally prepared baby foods in Sierra Leone. To meet the reason for the study, the accompanying research questions were replied:

- What are the characteristics of suckling mothers of infants between 6-24 months in Kenema district?
- What is the knowledge of suckling mothers on locally prepared baby food in Kenema district?
- What are the suckling mothers' perceived attributes and preference for locally prepared baby food in Kenema district?
- What are the barriers suckling mothers are contending with regarding use of locally prepared baby foods?

The interview timetable four segments were followed in breaking down and talking about the information related to suckling mothers' perceptions towards locally prepared baby foods:

Section A-Demographic and socioeconomic data

Section B- Knowledge of suckling mothers on locally prepared baby food in Kenema district

Section C-Suckling mothers' perceived attributes and preference for locally prepared baby food in Kenema district and

Section D-Barriers towards using locally prepared baby foods by suckling mothers.

### **Socio-Demographic Characteristics of the Study Respondents**

The evidence discussed in this section presents the respondent's demographic information. This was captured in responses to questions in section A of the structured interview schedule. Demographic data included respondents' age, marital status, religion, educational and employment status, husband/partner's educational status and occupation, their families' monthly incomes, and number of children.

#### **Age of respondents (n=50)**

The age of suckling mothers in the Kenema township ranged from 18 to above 45 years. According to Figure 4.1, majority of the suckling mothers (55%) interviewed in this study were relatively young (aged between 18-25 years). About 26% were aged between 26-35 years, 16% were between 36-45 years and less than 3% were above 45 years.

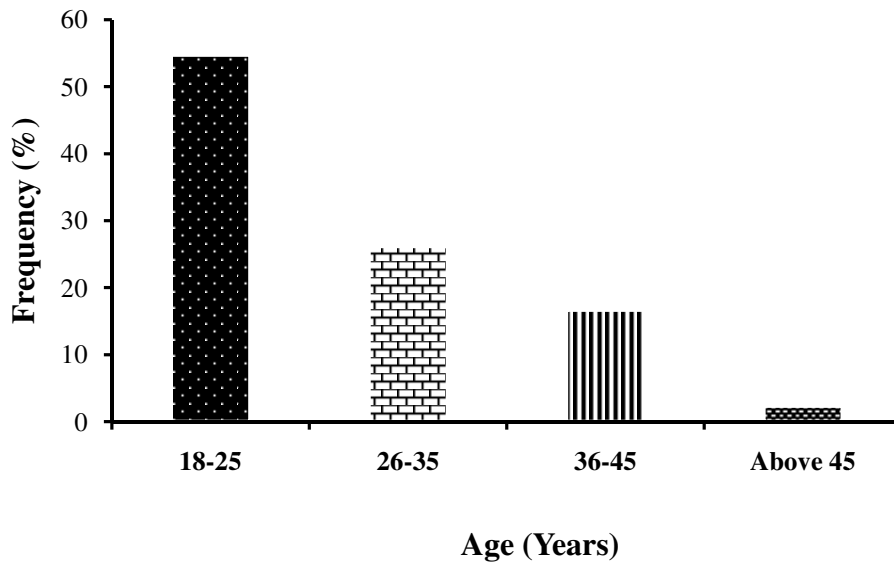


Figure 4.1 Age category of study participants

**Current marital status (n=50)**

According to Figure 4.2, about 48% of suckling mothers are married, whilst 29% are unmarried and smaller proportions were either separated (11.9%) or widowed (11.9%).

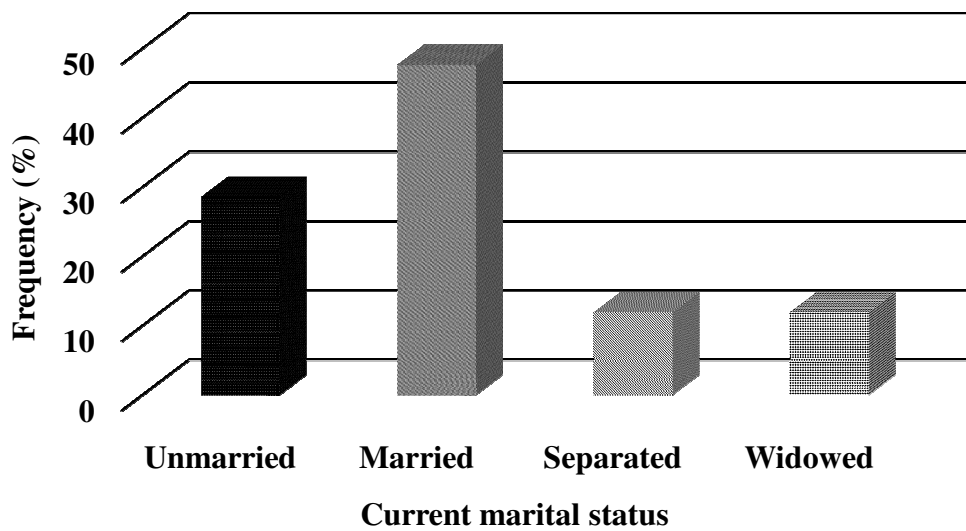


Figure 4.2 Marital status of study participants

**Religion (n=50)**

Majority of the respondents are Muslims (78.6%) and 21.4% are Christians (Fig. 4.3).

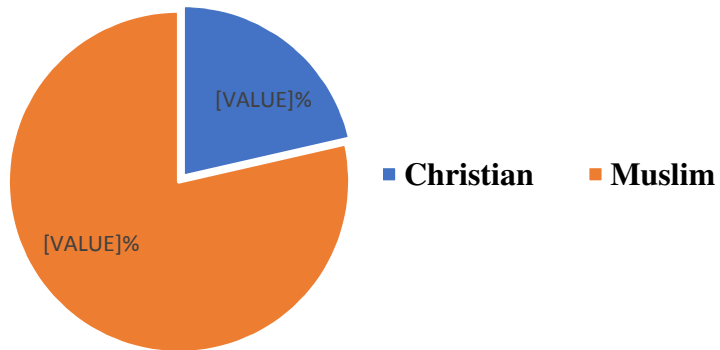


Figure 4. 3 Religion of study participants

**Current educational level (n=50)**

According to Figure 4.4, majority of the study respondents (57.1%) had secondary school education and only 14.3% had tertiary education. Smaller proportions of the respondents had primary education (11.9%) or never went to school (illiterates) (11.9%), while 4.8% had other forms of education (Arabic, informal schooling (adult education programs), vocational and technical schooling).

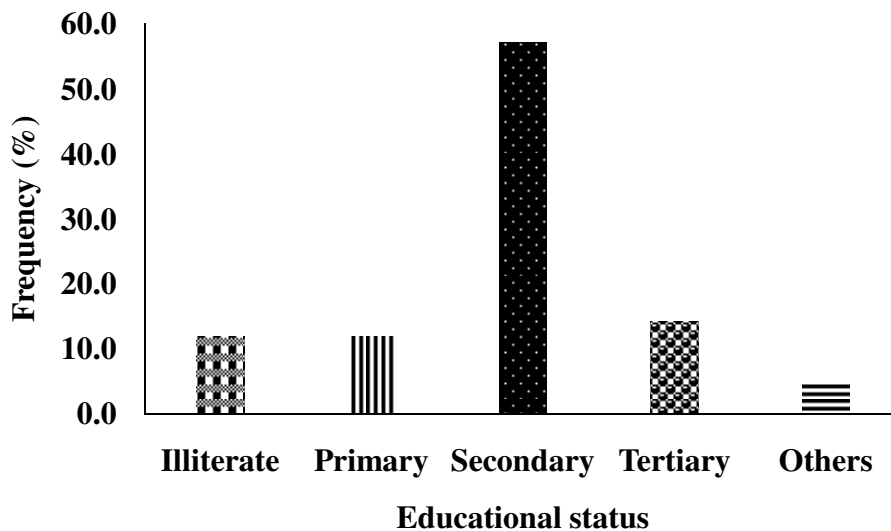


Figure 4.4 Educational status of study participants



**Husband/partner’s educational status currently? (n=50)**

The study participants were asked about the current educational status of their spouses or partners and 35.75% of the respondents indicated that their spouses or partners had secondary school education, 33.33% had tertiary education, 23.80% are illiterate whilst 2.38% had primary school education and the rest of the participants (4.76%) had other forms of education (Arabic, Vocational and technical education, informal schooling (adult education programs)) (Fig.4.5).

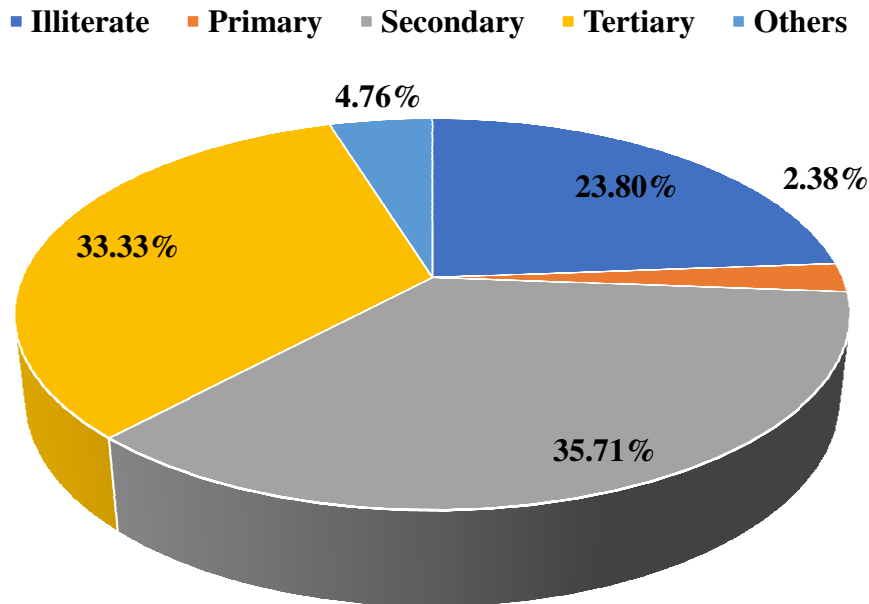


Figure 4.5 Study participantshusband/partner’s educational status

**Current occupational status (n=50)**

When study participants were asked about their current occupational status, their responses indicated that half of the respondents are housewives (50%), 21.4% are unemployed, 14.3% are self-employed, 7.1% are employed (on monthly salary) and 4.8% are casual workers. However, a very small proportion of the respondents (2.4%) indicated that they depend on remittances from relatives living overseas and friends in their communities, and others depend on their spouse or partner for financial support (Fig. 4.6).

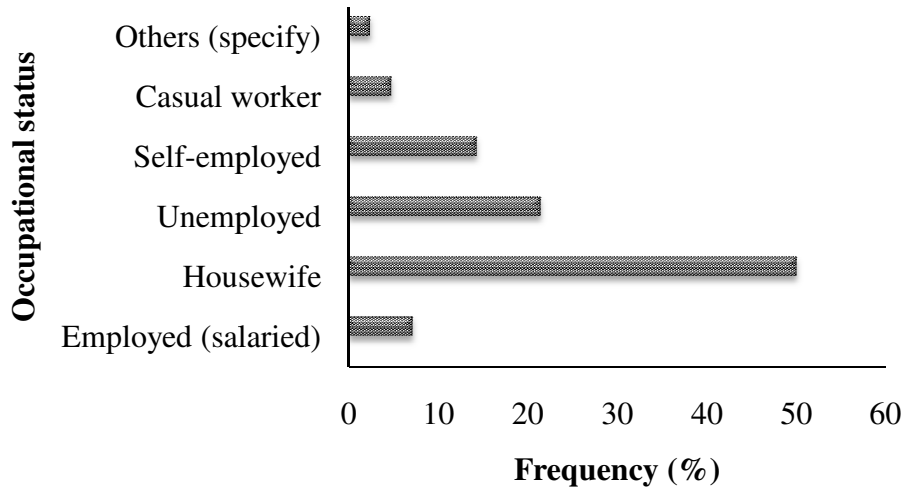


Figure 4.6 Current occupational status of study participants

**Husband/partner’s occupation? (n=50)**

When study participants were asked about the current occupational status of their spouses or partners, 21.19% of the respondents indicated that their spouse or partner is either employed or unemployed or self-employed. About 7% of the respondents are casual workers and 14.28% indicated that they are involved in back yard gardening, some depend on remittances from relatives living overseas and friends in their communities.

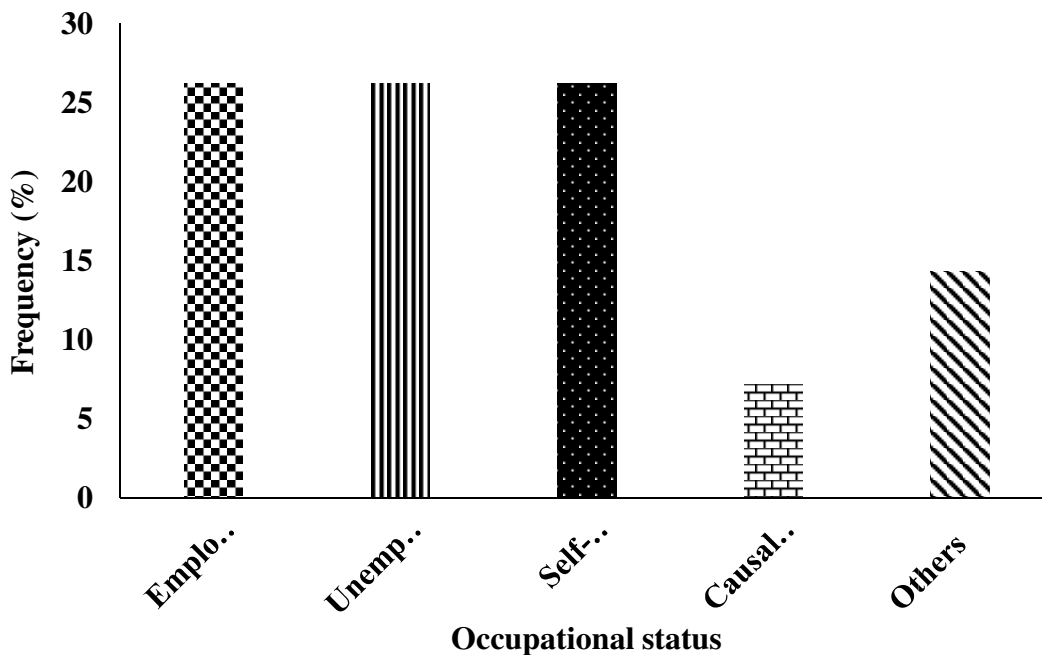


Figure 4.7 Study participants husband/partner’s occupational status

**4.2.8 What is your household monthly income? (Total household income) (n=50)**

In Sierra Leone, the minimum wage is five hundred thousand Leones (Le 500,000.00) and was used as benchmark to assess level of household monthly income regardless of the respondents’ educational and occupational status. According to responses by study participants, majority of respondents indicated that their household monthly income is below the minimum wage (52.38%), 23.81% are earning above and 4.76% earn far above the minimum wage, and those earning the minimum wage were below 20% (Fig. 4.8).

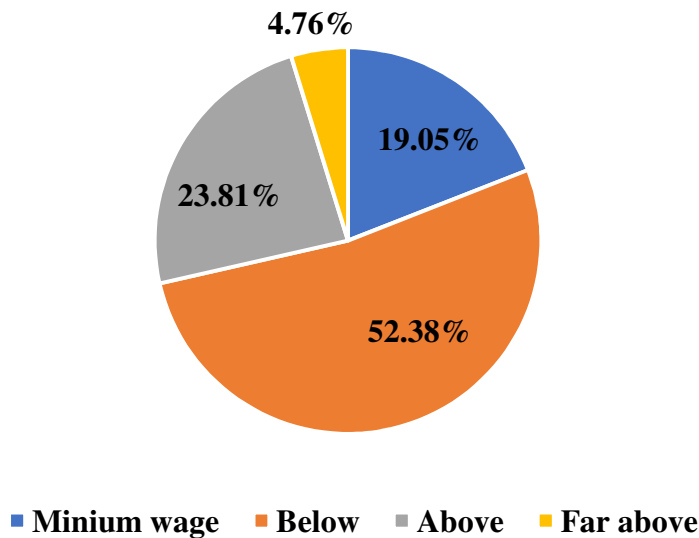


Figure 4.8 Study participants’ household monthly income

**How many children do you have?**

In the study, the researcher was interested in the number of children the respondents had during the period of the survey. According to Figure 4.9, it was clear that most of the study participants had two children (45.23%), 23.81% had one child, 16.67% had three children, 7.14% had four children and a similar proportion had five and above children.

Figure 4.9 Number of children per study participant

**Suckling Mothers ‘Knowledge on Locally Prepared Baby Food**

No	Question	Response	Frequency (%)	Std. Deviation
11	Have you ever heard of locally prepared baby	Yes No	92.9 7.1	0.50376

	food in Sierra Leone?			
12	How many types of the locally prepared baby food do you know?	One (1) Two (2) Three (3) More than Four (4)	19.5 36.6 31.7 12.2	0.94223
13	Identify the types of baby foods you have used (Please, tick all those you know)	<ul style="list-style-type: none"> <li>• Rice + Benni mix</li> <li>• Parboiled rice+ Benni mix</li> <li>• Rice + Benni mix + Parboiled rice</li> <li>• Rice + Benni mix, Potato + Ripe plantain +Dry plantain</li> <li>• Rice + Benni mix + Parboiled rice +Dry plantain</li> <li>• Rice + Benni mix + Potato + Dry plantain flour</li> <li>• Rice + Benni mix + Ripe plantain + Dry plantain flour</li> <li>• Dry plantain flour + Oats</li> <li>• Rice + Benni mix + Dry plantain flour</li> <li>• Rice + Benni mix + Ripe plantain</li> <li>• Rice + Benni mix + Parboiled rice+ Pumpkin porridge</li> <li>• Rice + Benni mix + Parboiled rice + Ripe plantain + Pumpkin porridge +Oats</li> <li>• Rice+ Benni mix + Parboiled rice + Ripe plantain</li> <li>• Rice + Benni mix + Parboiled rice + Ripe plantain + Dry plantain + Oats</li> <li>• Rice + Benni mix + Parboiled rice + Potato Benni mix + Ripe plantain +Oats</li> <li>• Rice + Benni mix + Parboiled rice + Potato</li> <li>• Rice + Benni mix + Potato</li> <li>• Rice + Benni mix + Parboiled rice + Potato + Ripe plantain</li> <li>• Rice + Benni mix + Parboiled rice + Potato + Dry plantain flour</li> </ul>	28.2 2.4 7.1 2.4 7.1 2.4 4.8 2.4 4.8 4.8 2.4 2.4 2.4 4.8 2.4 2.4 2.4 4.8 2.4 2.4 4.8 4.8 4.8	8.38134

		• Rice +Benni mix + ripe plantain +Oats		
14	Do you have any knowledge on how to prepare any locally prepared baby food?	Yes No	78.6 21.4	0.41530
15	Have you ever used any locally prepared baby food for your child?	Yes No	81.0 19.0	0.39744
16	Select the locally prepared baby food you know is more nutritious for your child.	<ul style="list-style-type: none"> <li>• Rice + Benni mix</li> <li>• Parboiled rice</li> <li>• Oats</li> <li>• Rice + Benni mix + Dry plantain</li> <li>• Rice + Benni mix + Ripe plantain</li> <li>• Rice + Benni mix + Parboiled rice</li> <li>• Rice + Benni mix + Potato</li>   <li>• Rice + Benni mix + Parboiled rice + Ripe plantain + Pumpkin porridge + Oats</li>   <li>• Rice + Benni mix + Parboiled rice + Ripe plantain + Dry plantain flour + Oats</li> <li>• Rice + Benni mix + Ripe plantain + Oats</li> <li>• Dry plantain flour + Oats</li>   <li>• Rice +Benni mix + Ripe plantain + Dry plantain flour</li> </ul>	40.5 9.5 4.8 9.5 2.4 14.3 2.4  2.4  2.4 7.1 2.4  2.4	5.16741

Additionally, the researcher was interested in the level of awareness about locally prepared baby food in the Kenema district. According to Table 4.1, it was clear that there is high level of awareness about locally prepared baby food in the study area. Majority of suckling mothers (92.9%) agreed to have heard of locally prepared baby food in Sierra Leone and only a smaller proportion (7.1%) of the respondent said “No” in response to question No. 11 (Q11).

In response to question No.12 (Q12), amongsuckling mothers who have heard of locally prepared baby food, 36.6% indicated that they knew two (2) types, 31.7% knew three (3), 19.5% knew one (1) and 12.2% knew more than four (4) types of locally prepared baby food in Sierra Leone (Table 4.1).

Table 4.1 Suckling mother’s knowledge on locally prepared baby food in Kenema Town.

In response to question No. 13 (Q13), among listed locally prepared baby food in Sierra Leone, the respondents identified a wide range (Std. Dev. =8.38134) of combinations of locally prepared baby food that they have used. Among users of locally prepared baby food in the Kenema township, 28.2% of respondents identified Rice + Benni mix, 7.1% each identified Rice + Benni mix + Parboiled rice and Rice + Benni mix + Parboiled rice +Dry plantain, and 4.8% each identified the following combinations; Rice + Benni mix + Ripe plantain + Dry plantain flour, Rice + Benni mix + Dry plantain flour, Rice + Benni mix + Parboiled rice + Pumpkin porridge, Rice + Benni mix + Parboiled rice + Ripe plantain + Dry plantain + Oats, Rice + Benni mix + Potato, Rice + Benni mix + Parboiled rice + Potato + Dry plantain flour and Rice +Benni mix + ripe plantain +Oats. However, very small proportions of respondents (2.4%), each identified a variety of combinations of locally prepared baby foods as shown in Table 4.1.

When asked if respondents have any knowledge on how to prepare any local baby food(question No. 14 (Q14)), majority said “yes” (78.6%) they have knowledge and only 21.4% indicated that they don’t have knowledge on how to cooklocally prepared baby food.

In response to question No. 15 (Q15), 81.0% of respondents indicated that they have used locally prepared baby food and 19.0% denied using such products for their babies.

Additionally, the researcher was interested on the study participants’ knowledge on the nutritional value of each of the locally prepared baby food. In response to question No. 16 (Q16), there was a wide variation (Std. Dev. =5.16741) on the choice of selected items, 40.5% of respondents selected Rice + Benni mix as more nutritious, 14.3% selected Rice + Benni mix + Parboiled rice and 9.5% each of the respondents selected Parboiled rice and Rice + Benni mix + Dry plantain. In addition, 4.8% of the respondents selected Oaths and very small proportions (2.4%), each selected from five different combinations of locally prepared baby food as shown in Table 4.1.

**Suckling Mothers’ Perceived Attributes and Preference for Locally Prepared Baby Food in Kenema town**

In this study, the researcher was interested in the perceived attributes and preference for locally prepared baby food in the study area. Therefore, the respondents were asked several questions (Q17-Q21) related to their perceived attributes and preferences. In response to question No. 17 (Q17), majority of respondents (78.6%) indicated that they prefer to use locally prepared baby food for feeding their 6-24 months old babies and 21.4% of them thought otherwise (Table 4.2).

In response to question No. 18 (Q18), over half of the respondents (54.8%) believed that locally prepared baby foods are more nutritious than imported baby foods, however, 45.2% of them disagreed. They are of the view that imported baby food is more nutritious than locally prepared baby food (Table 4.2).

Table 4.2 Suckling mothers’ perceived attributes and preference for locally prepared baby foods

No.	Question	Response	Frequency (%)	Std. Deviation
17	Do you prefer to feed your child with locally prepared baby food?	Yes No	78.6 21.4	0.41530
18	Do you think locally prepared baby foods are more nutritious than imported foods?	Yes No	54.8 45.2	0.50376
19	When did you started using locally prepared baby food? (year or duration)	In months (less than a year)	33.3	0.47712

		In years (more than a year)	66.7	
20	How often do you feed your baby per day with locally prepared baby food? (No of feeds per day).	2 times 3 times 4 times	31.0 57.1 11.9	0.63392
21	How do you feel about the way your child accepts this food?	Very good Good Bad Very bad	64.3 35.7 0 0	0.48497

When respondents were asked for how long they have used locally prepared baby food (Question No. 19 (Q19)), majority of them (66.7%) indicated that they started using locally prepared baby food more than a year ago and others (33.3%) asserted less than a year (months ago) (Table 4.2).

In response to question No. 20 (Q20), over half of the respondents (57.1%) indicated that they feed their babies with locally prepared baby food about three times per day, 31.0% indicated two times and 11.9% indicated four times per day (Table 4.2).

When asked about their feeling when baby accepts to feed on locally prepared baby food (question No. 21 (Q21)), majority of respondents (64.3%) indicated that they felt very happy and good and 35.7% felt good whilst none of them (0%) felt bad or very bad (Table 4.2).

### Barriers towards Using Locally Prepared Baby Foods

In section D of the interview schedule, explicit inquiries were posed to evaluate the respondents' apparent experience on barriers towards locally prepared baby foods in Kenema town. In that regard, the respondents were asked if they encounter problems in getting ingredients to prepare local baby food (question No. 22 (Q22)), in response over half of them (52.4%) confirmed that they do experience challenges in securing ingredients to prepare local baby food for their infants. However, 47.6% of the respondents indicated that they do not encounter any problems in getting ingredients to prepare their preferred baby food (Table 4.3).

Table 4.3 Barriers towards using locally prepared baby foods by suckling mothers

No.	Question	Response	Frequency (%)	Std. Deviation
22	Do you have problems to get ingredients to prepare local baby food?	Yes No	52.4 47.6	0.50549
23	Are ingredients for locally prepared baby food easily available?	Yes No	76.2 23.8	0.43108
24	Where do you usually get the ingredients when you want to prepared the food? (Please, tick)	From the local market From the super market From the family food	76.2 19.0 4.8	0.64347
25	How many minutes/hours do you take to cook local baby food for feeding?	30-40 minutes 1 hour 1½ hour 2 hours More than 2 hours	28.6 59.5 7.1 4.8 0.0	0.73923

26	Why do you prefer locally prepared baby foods to imported baby foods?	Price/cost Safety Nutrient contents	64.3 33.3 2.4	0.53885
27	Why do you prefer imported baby food to locally prepared baby food?	Convenience Time Cost	50.0 31.0 19.0	0.78050

The respondents were asked about the availability of ingredients to prepare local babe foods (question No. 23 (Q23)) and in response, majority of them (76.2%) agreed that it is easy to get ingredients locally and 23.8% of them disagreed (implying that it is not easy to get ingredients in local markets) (Table 4.3). In response to a follow up question (question No. 24 Q24)) on where they get ingredients, majority of respondents (76.2%) indicated that they buy ingredients from the local market in their communities. It was a small proportion of them (19.0%) who get ingredients from the supermarket and a smaller proportion (4.8%) indicated that they obtain ingredients from the family foodto prepare local babe food (Table 4.3). In addition, the researcher was interested in the amount of time spent on preparing local baby food bythe respondents. When asked about the time used to cook baby food for feeding (question No. 24 (Q24)), about 60% of the respondents indicated that they use one hour for cooking the food, 28.6% indicated 30-40 minutes, 7.1% indicated one and half hours and 4.8% stated two hours for cooking. None of the study participants (0%) used more than two hours to prepare baby food for feeding (Table 4.3).

With regards to preference for locally prepared baby food over imported food, majority of the respondents (64.3%) indicated that they prefer locally prepared baby food because of the price/cost. Locally prepared baby food was considered to be far cheaper compared to imported food. A lesser proportion of the respondents (33.3%) preferred locally prepared baby food because of safety. The researcher noted that some of the respondents were of the view that some imported food has expired in storage and the expiry dates are manipulated or changed for profit or to avoid loss of capital. Notably, the respondents stressed that when preparing the baby food, they can ensure safety and hygiene in their homes and kitchens. Interestingly, 2.4% of the respondents indicated that they prefer locally preparedbaby food because of its nutritional contents (Table 4.3).

In response to question No. 27(Q27), half of the respondents (50%) indicated that they preferimported food over locally prepared baby food because of convenience, 31.0% indicated time and 19.0% indicated the cost. According to those who indicated time (31.0% of respondent), they were of the view that far lesser time is required to prepare imported food compared to locally prepared baby food.

## **SUMMARY, CONCLUSION AND RECOMMENDATION**

### **Introduction**

The previous chapter covered presentation and description of results. This chapter provides a general discussion the research findings in relation to suckling mothers’ perceptions toward locally prepared baby foods in Kenema Township, Kenema district. The research findings are presented and discussed according to the objectives of the study. The chapter also presents the conclusions from the findings.



## **Socio-Demographic Characteristics of Suckling Mothers**

In this study, suckling mothers were mostly young adults with age ranging from 18 to above 45 years and the majority (55%) of them were in the range of 18-25 years old, and were married (48%) and practiced the Muslim faith (74.9%). Majority of the study respondents (57.1%) had secondary school education and their spouses or partners had secondary school education (35.75%) as well. Half of the respondents are housewives (50%) and 21.19% of their spouses or partners are either employed or unemployed or self-employed. Majority of the respondents have a household monthly income that is below the minimum wage (52.38%) and with two children (45.23%). Taken together, it is clear that the study participants are most young adults at their reproductive age were recruited in the study and notably, they were not well educated (secondary schooling), relatively poor (with household monthly income below the minimum wage in Sierra Leone) and had experience in feeding infants (most with two children). This finding is similar to reports of a study conducted in rural communities in Kenya (Matsuyama et al., 2013) and Uganda (Engebretsen et al., 2012). In the study by Matsuyama et al. (2013), mothers of 2- to 3-month-old babies were noted to give porridge, water, juice, herbal medicine, and over-the-counter medicine to infants instead of exclusive breast feeding and the authors related their observation to the level of education and socioeconomic status of the mothers. Similarly, in the study by Engebretsen et al. (2012), young adult mothers were noted to provide limited breast milk to their babies and that was attributed to mainly ignorance (poor educational level) and poverty as the women emphasized lack of time, exhaustion and hunger as factors for limited breast milk production. Unfortunately, no study has been conducted in Sierra Leone with regards to exclusive breast feeding of infants among young suckling mothers and their knowledge on supplementary baby foods.

## **Suckling Mothers' Knowledge, Preference and Barriers towards use of Locally Prepared Baby Food in Kenema Town**

According to the NNS (2014), the national prevalence of global acute malnutrition (GAM) was 4.7% (4.3 – 5.2 95% CI) and the severe acute malnutrition (SAM) rate was 1% (0.9 – 1.2 95% CI) in Sierra Leone. According to this report, the stunting rate was still moderately high at 28.8% (27.5 – 30.2 95% CI) in the country and some districts in the country were reported to have GAM rates above 5% threshold indicating nutrition situation at poor levels according to WHO classification. Notably, Kenema district, where the current study was carried out, was reported to have a GAM rate of 5.5%. Although the country has managed to reduce the rates of stunting and underweight (from very high to medium in 2014) and wasting (from very high to low), however, more needs to be done to achieve the 20% threshold set by WHO and WHA global targets by 2025 to improve maternal, infant and young child nutrition especially in rural communities in the country such as in the Kenema districts. Like in most of districts in the country, the micronutrient status in Kenema district remains a major nutritional challenge as shown by data from the Sierra Leone Micronutrient Survey (SLMS, 2015), which was conducted for the first time in the country. Micronutrient deficiency disorders of iron deficiency anaemia, Vitamin A, iodine and folate deficiencies continue to pose public health concerns especially for infants between 6-24 Months. The SPRING (2014) interventions under Feed the Future for nutrition and nutrition-sensitive agriculture programme, identified several vulnerable groups in Sierra Leonean communities and that children 0-59 months, Infant and young child feeding practices (IYCF) in Sierra Leone are generally inadequate. In addition to poor Infant and young child feeding practices, lack of safe drinking water, sanitation and hygiene problems, appropriate knowledge, attitude and nutrition practice of most suckling mothers in their daily duties greatly affect their nutritional status and consequently a risk factor. More so, one of the main causes of nutritional problems is the lack of nutrition knowledge, results in poor practice, which causes serious harms such as malnutrition and various non-communicable diseases.

Satisfactory diet, physical activity and nutritional status are recognized as major determinants of health of children. Appropriate complementary feeding promotes growth and prevents stunting among children between 6 and 24 months of age. Infants are particularly vulnerable to malnutrition and infection during the transition period when complementary feeding begins (GoSI/MoHS, 2016). Generally, most suckling mothers perceive imported baby food such as Nutrilon, Cornmilk, Nutrilac, Cerelac, Fortulac etc., to be adequate and effective in providing all the essential nutrients in their correct proportion for infants. However, most of these feeding stuffs (imported baby foods) are expensive and in most instances unavailable in super markets and local markets. On the other hand, a sound and culturally appropriate nutrition counseling should be given to mothers of young children so that they can make the widest possible use of indigenous, locally available foods which are safely prepared and fed in the home and the ingredients are always available in local markets. The agriculture sector has a particularly important role to play in ensuring that suitable foods for use in complementary feeding are produced, readily available and affordable (Kimani-Murage et al., 2011; Veldsman et al., 2015). One of the objectives of the current study was to assess the knowledge of suckling mothers on locally prepared baby food in the Kenema district. According to the results, it was clear that there is a high level of awareness about locally prepared baby food in the study area as majority of suckling mothers (92.9%) interviewed agreed to have heard about availability of different local complementary foods for infants. For example, about 36.6% of suckling mothers indicated that they knew of at least two (2) types of locally prepared baby food and Rice + Benni mix was considered to be more nutritious (40.5%) compared to others and was identified as the most popular among suckling mothers (28.2%) in Kenema Township (Table 4.1). Majority of suckling mothers (78.6%) were noted to have knowledge on how to prepare local complementary baby food and 81.0% of them indicated that they have used locally prepared baby food to feed their infants in the past (Table 4.2).

In this study, majority of suckling mothers (78.6%) were noted to prefer using locally prepared baby food for feeding their 6-24 months old babies because 54.8% of them believed that local baby food is more nutritious than imported baby food (Table 4.2). However, 45.2% of them disagreed with this notion because imported baby food is considered to be adequate and effective in providing all the essential nutrients in their correct proportion for infants. Notably, suckling mothers (66.7%) were noted to have used locally prepared baby food for more than a year and they usually fed their babies about three times per day (57.1% of suckling mothers) and they felt very happy and good (64.3%) after feeding their infants with locally prepared baby food (Table 4.2).

According to results obtained in the study, several barriers were noted by suckling mothers towards consumption of locally prepared baby foods in Kenema Township. About 52.4% of suckling mothers interviewed indicated that there are challenges in obtaining ingredients to prepare local baby food for their infants and 23.8% of them confirmed that it is not easy to get ingredients in their communities although 47.6% of them do not acknowledge getting ingredients as a barrier to prepare their preferred baby food (Table 4.3). The cost/price of ingredients for local baby food in local markets was not acknowledged as barriers, however, availability of ingredients, safety and hygiene, time to cook local baby food, inadequate nutritional contents and the convenience of imported baby were considered as barriers towards locally prepared baby food (Table 4.3). Most of the food items (rice, Sesame seeds (Benni mix), plantain, pumpkin, common beans) in locally prepared food are seasonal crops and their availability in local markets depends on the time of the year especially so that preservation of fresh produce is a major challenge in the country. Safety and hygiene were perceived as barriers towards locally prepared baby food because the utensils used in the preparation process must be cleaned and contaminant free regularly and the place where the baby food is prepared must be always clean and hygienic (Kimani-Murage et al., 2011; Veldsman, et al., 2015). Time to cook local baby food was another barrier highlighted because cooking baby food will require time to process

all the ingredients (washing, chopping, boiling, mashing and blending) and do the actual cooking of the food whenever the baby needs to feed. Suckling mothers were of the view that locally prepared baby food does not have adequate nutritional content for the nourishments of the babies and would prefer using imported baby food if they can afford. Imported baby food is always available in the super market or stores and it requires less time to prepare it for the baby. In most instances, it's just a matter of adding boiled water to the imported food and mix before feeding the baby. It is important to note that this study is the first to be carried out in the country and literature is scant to corroborate the findings. However, taken together, findings in the current study are in line with those reported by Kimani-Murage et al. (2011), when describing the patterns and determinants of breastfeeding and complementary feeding practices in urban informal settlements in Nairobi, Kenya.

## **Conclusions**

Based on the study findings, it can be concluded that suckling mothers in the study area were mostly married young adults in the range of 18-25 years old, and were predominantly Muslims. They were noted to have had secondary school education as well as their spouses or partners. They were mostly housewives and their spouses or partners are either employed or unemployed or self-employed. Majority of suckling mothers were with at least two children and have a household monthly income that is below the minimum wage. However, a high awareness level about locally prepared baby food was noted among suckling mothers, who have knowledge and experience on how to prepare local complementary baby food. Notably, they believed some locally prepared baby foods are more nutritious compared to imported baby food. However, availability of ingredients, safety and hygiene, time to cook local baby food, inadequate nutritional contents and the convenience of imported baby are considered as barriers towards using locally prepared baby food.

## **REFERENCES**

- Brink, H., Walt, CVD and Rensburg, GV.(2018). Fundamentals of research methodology for healthcare professionals.4th edition. South Africa: Juta.
- Creswell, JW. (2014). Research Design Qualitative and quantitative and mixed methods approaches.Fourth edition.SAGE.
- Engbretsen, MSI.,Moland, KM., Nankunda, J., Karamagi, CA., ThorkildTylleskär, T and Tumwine, JK. (2010). Gendered perceptions on infant feeding in Eastern Uganda: continued need for exclusive breastfeeding support. International Breastfeeding Journal, 5:13-28.
- [http://www.who.int/nutrition/topics/global\\_targets\\_policy\\_brief\\_overview.pdf](http://www.who.int/nutrition/topics/global_targets_policy_brief_overview.pdf)
- International Food Policy Research Institute. 2017. 2017 Global food policy report. Washington, DC: International Food Policy Research Institute. <https://doi.org/10.2499/9780896292529>.
- Kumar, R. (2019). Research Methodology, step by step guide for beginners.Fifth edition. London; Thousand Oaks, California: SAGE
- Matsuyama, A., Karama, M., Junichi Tanaka, J and Kaneko, S. (2013). Perceptions of caregivers about health and nutritional problems and feeding practices of infants: a qualitative study on exclusive breast-feeding in Kwale, Kenya.BMC Public Health, 13:525-245.
- National Food and Nutrition Security Implementation plan, 2013-2017 (2013). MAFFS, MOHS, National Nutrition Survey (2014). MOHS, UNICEF, Irish Aid.
- National Ebola Recovery Strategy 2015-2017 (2015).MOH/MAFFS.

Sierra Leone Food and Nutrition Security Policy (2012-2016). MOH/MAFFS.WHO 2<sup>nd</sup> Global Nutrition Policy Review 2016-2017. <https://extranet.who.int/nutrition/gina/en/node/11533>

Sierra Leone Micronutrient Survey (2015): MOHS, UNICEF, World Health Organization (WHO and Helen Keller International (HKI).

Sierra Leone Food Based Dietary Guideline for Healthy Eating (2016). A guide for use for the general public.

Sierra Leone National Nutrition Survey (2017), Ministry of Health and Sanitation (MOHS), United Nations Children’s Fund (UNICEF); Irish Aid.

The Nutritional Situation in Sierra Leone, Nutrition Survey using SMART Methods (2010) Demographic Health Survey (DHS) (2008) of the Ministry of Health and Sanitation. Standardized methodology of assessment in relief and transition United Nations Children’s Fund (2010) (UNICEF).

Kimani-Murage,WE.,Madise, JN., Fotso, JN., Kyobutungi, C, Mutua, KM., Gitau, MT., Yatchi, N. (2011). Patterns and determinants of breastfeeding and complementary feeding practices in urban informal settlements, Nairobi Kenya.BMC Public Health. <http://www.biomedcentral.com/1471-2458/11/396>.

Veldsman, Z.,Scholfeldt,HC and Hall, N.(2015). The role of traditional foods in food based dietary guidelines. IFDC Hyderabad,India.

World Health Organisation (WHO), (2003).Diet, nutrition and prevention of chronic disease. Report of a Joint WHO/FAO Expert Consultation. WHO Technical Report #916. Geneva. WHO. Available at <http://www.who.int/dietphysical activity/publications/trs916/en/>.

World Health Organization (2006).Five keys of food safety.Department of food safety, zoonoses and foodborne diseases.

## APPENDIX A

### Structured Questionnaire for suckling mothers

---

Interview to know the perception of suckling mothers towards locally prepared baby food in Kenema District.

Participants’ ID \_\_\_\_\_ Street name \_\_\_\_\_

Interviewer ID \_\_\_\_\_

### **Section A: Socio-demographic characteristics of suckling mothers participating in the study**

Q. No.	Questionnaire	Responses
01	Place of residence	Name of Street.....

02	Age of respondent (years)	18-25..... 26-35..... 36-45..... Above 45 ...
03	Religion	Christian..... Muslim..... Others.....
04	Current educational level	Illiterate..... Primary..... Secondary..... Tertiary..... Others.....
05	Occupational status	Employed (salaried)..... Housewife..... Unemployed..... Self-employed..... Casual worker..... Other (specify).....
06	Marital status	Unmarried..... Married ..... Separated..... Widowed.....
07	Husband / partner educational status?	Illiterate..... Primary..... Secondary..... Tertiary.....
08	Husband/partner occupation?	Employed..... Unemployed..... Self-employed.....

		Casual worker..... Other .....
09	What is your total household monthly income?	Minimum wage..... Below..... Above..... Far above.....
10	How many children do you have?	One (1) ..... Two (2) ..... Three (3) ..... Four (4) ..... Five & above (5+) ....

**Section B: Knowledge of suckling mothers on locally prepared baby food in Sierra Leone**

Q No	Questionnaire	Responses
11	Have you ever heard of locally prepared baby food in Sierra Leone?	Yes..... No.....
12	How many types of the locally prepared baby food do you know?	One (1) ..... Two (2) ..... Three (3) ..... Four & above (4) .
13	Identify the types of baby foods you have used (Please, tick all those you know)	Rice Bennimix... Parboiled rice.... Potato Bennimix... Ripe plantain..... Dry plantain flour.... Pumpkin porridge.....

14	Do you have any knowledge on how to prepare any locally prepared baby food?	Yes..... No.....
15	Have you ever used any locally prepared baby food for your child?	Yes..... No.....
16	Select the locally prepared baby food you know is more nutritious for your child.	Rice Bennimix... Parboiled rice... Potato Bennimix... Ripe plantain..... Dry plantain flour... Pumpkin porridge..... Oats..... Other specify....

**Section C: Suckling mothers’ perceived attitudes and preference for locally prepared baby food in Sierra Leone**

Q No	Questionnaire	Responses
17	Do you prefer to feed your child with locally prepared baby food?	Yes..... No.....
18	Do you think locally prepared baby foods are more nutritious than imported foods?	Yes..... No.....
19	When did you start using locally prepared baby food? (year or duration)	Duration----- Year-----

20	How often do you feed your baby per day with locally prepared baby food? (No. of feeds per day).	2 times..... 3 times..... 4 times..... Other.....
21	How do you feel about the way your child accepts this food?	Very good..... Good ..... Bad..... Very bad.....

**Section D: Barriers towards using locally prepared baby foods by suckling mothers**

Q No	Questionnaire	Responses
22	Do you have problems to get ingredients to prepare local baby food?	Yes..... No.....
23	Are ingredients for local baby food easily available?	Yes..... No.....
24	Where do you usually get the ingredients when you want to prepare the food? (tick)	From the local market.... From the supermarket ... From the farm/garden
25	How many minutes/hours do you take to cook local baby food for feeding?	Less than 30 minutes... 30-45 minutes..... 45-60 minutes..... More than 60 minutes....



26	Why do you prefer locally prepared baby foods to imported baby foods?	Cost..... Safety..... Nutrient content.....
27	Why do you prefer imported baby food to locally prepared baby food?	Convenience..... Time..... Other.....

Thank you for your time taken to fill this form.