

# **MIDLANDS STATE UNIVERSITY**



**FACULTY OF EDUCATION**

**DEPARTMENT OF APPLIED EDUCATION**

**Nutrition knowledge, attitudes and practices of primary school learners' parents in Mkoba South: Implications for Nutrition Education.**

**BY**

**SEFA ELLEN MAPIWA**

**R156749V**

**A research project submitted to the Department of Education in partial fulfillment of the requirements for the Bachelor of Education Degree in Food Science and Nutrition**

**GWERU, ZIMBABWE**

**JUNE, 2018**

**Approval Form**

The undersigned certify that they have read and recommend to the Midlands State University for acceptance, a dissertation entitled :- Nutrition Knowledge, Attitudes And Practices Of Primary School Learners' Parents In Mkoba South: Implications For Nutrition Education, submitted to the Faculty of Education, Department of Applied Education by SEFA ELLEN MAPIWA Registration number R156749V

.....

Supervisor

.....

Department Chairperson

Date.....

**Release Form**

**Name of Author** SEFA ELLEN MAPIWA

**Title of Dissertation** Nutrition Knowledge, Attitudes And Practices Of Primary School Learners' Parents In Mkoba South: Implications For Nutrition Education.

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**Address** 2 Kopje Road  
Gweru East  
Gweru

**Date** June 2018

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I, SEFA ELLEN MAPIWA, declare that this is my original work and affirm that this has not been submitted to this University in support of any application for a degree or any other qualification.

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## **Dedication**

To my brother Brian and Susanne Meyfarth, my second mom, who were untimely taken from us and could not be here to see me complete and attain my first degree.

## **Abstract**

The main purpose of this study was to assess the nutrition knowledge, attitudes and practices within the Mkoba South community and promote nutrition education with the aim of improving nutrition knowledge and food choices, to encourage a better quality of life and improve performance of learners. The research was qualitative in nature and the design used was the participatory action research. Due to the nature of the research design adopted, a purposive sample was drawn from the population and comprised of 10 participants. For the purposes of this study, focus groups, food frequency questionnaires, and observation were the methods for data collection. The major findings were that the constraints of low income construct practical barriers to healthy eating, further socio-environmental factors, such as culture, lack of literacy and education, enhance the effects of deficiency in nutritional knowledge, negative attitudes and poor practices. The major conclusion reached was that there is definite need for Nutrition Education to be implemented for the benefit of the learners in primary schools.

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## **CHAPTER 1**

### **RESEARCH PROBLEM**

#### **1.1 Introduction**

This chapter states the problem that is to be researched and the background with respect to the investigation, justification and identification of the gap in nutrition knowledge of the parents of learners in Mkoba South schools. The chapter also outlines the significance of the study being undertaken, clarifying its relevance. The potential limitations and delimitations are also highlighted. Operational terms of significance to the study are defined.

#### **1.2 Background to the Study**

A complex interrelationship between nutrition, social and economic factors, health and education, exists. Social and family factors such as the behavior of parents and peers, advertising and marketing and practices related to food production and consumption, all affect food preferences. The constraints of low income create practical barriers to healthy eating, additional socio-environmental factors, such as culture, lack of literacy and education increase the effects of deprivation.

Proper nutrition is essential to maximizing brain function and enhancing learning. "Children with nutritional deficiencies are particularly susceptible to the moment-to-moment metabolic changes that impact upon cognitive ability and performance of the brain." (Sorhaindo & Feinstein, 2006, p. i) Encouraging children to develop healthful habits from a young age will aid them in reaching their optimal potential. When children

make healthy food choices, this enables them to attain their optimum growth, development and health potential. Healthy eating also allows children to take full advantage of the opportunity to learn and to play during the school day (Faber & Wenhold, 2007, p. 393; Labadarios, 2005, p. 119) as cited in Oosthuizen, (2007, p. 1)

Research has suggested that the provision of nutritious food at school enhances not only the child's health but also permits the child to take full advantage of the education provided by bettering attention levels and concentration spans. Children's appetites vary with age and according to times of accelerated growth, therefore, it is important that the food intake of school children should not be unnecessarily limited. Children need energy and nutrients to fulfill growth needs and requirements for everyday activities (Oosthuizen, 2007).

Nutrition, chiefly in the short-term, is believed to have an impact upon individual behavior, (e.g. concentration, activity levels). These behaviors can possibly affect school performance and interaction with peers, and may also compromise self-esteem. "For example, lack of thiamin (Vitamin B) in the diet appears to have causal relationship with behavioral problems in adolescents, such as irritability, aggressive behavior and personality changes." (Sorhaindo & Feinstein, 2006, p. ii).

Lack of proper nutrition, in its more extreme form, may manifest itself through the presence of developmental disorders, such as attention-deficit-hyperactivity disorder (ADHD), dyslexia, dyspraxia and autistic spectrum disorders (Sorhaindo & Feinstein, 2006). Children who are diagnosed with ADHD suffer from difficulty concentrating, sitting

still, being quiet and tend to have short attention spans. These behaviors, are likely to affect school performance, interaction with peers, and compromise self-esteem. Poor nutrition may also result in decreased immunity and greater vulnerability to infectious diseases, which in itself has the potential to lead to increased levels of absence from school due to ill health.

Malnutrition can be simply defined as a lack of proper nutrition. “When there is a deficiency in the amount and nutritional value of the food consumed, the growth pattern of a child becomes disrupted owing to nutrient deficiencies.” (Faber & Wenhold, 2007, p. 393; Labadarios, 2005, p. 119) as cited in Oosthuizen, (2007, p. 1).

According to World Health Organization (WHO), (2001b), some causes of malnutrition include household food insecurity, lack of knowledge and education, caring practices and health services, as well as an unhealthy environment, all of which are referred to underlying causes. Hunger and under-nutrition occur as a result of poor food consumption, poor care and unhealthy facilities. Agricultural barriers, lack of employment opportunities and women’s status in society, also indirectly lead to hunger and under-nutrition.

According to Sorhaindo & Feinstein (2006), the level of food insecurity within the household determines the nutritional status of children, and is the direct cause of malnutrition. Parents and caregivers make most of the food choices for meals consumed at home and school. These choices are largely based on culture, beliefs, cost, time restraints and availability (Sorhaindo & Feinstein, 2006). “Low income is a major barrier

to healthy eating. Deprived households are more likely to have unhealthy food and insufficient amounts of food.”( Sorhaindo & Feinstein, 2006, p. 24)

### **1.3 Statement of the problem**

Nutrition education is a major factor in improving nutrition knowledge, attitudes and practices (KAP) of school children, family and the community at large (Contento, 2007). Proper nutrition is essential to maximizing brain function and enhancing learning. Encouraging children to develop healthful food habits from a young age will assist them in reaching their best possible potential. This research paper attempts to look at extent of the nutrition knowledge, attitudes and practices of primary school learners’ parents in Mkoba South. This is with the hope to endorse nutrition education with the aim of improving nutrition knowledge and food choices, to promote a better quality of life into adulthood through children’s nutritional intake inside and out of school.

It is hoped that sufficient research exists that is readily accessible to schools and parents so that children have the opportunity to be as nutritionally healthy as possible for optimal brain function, cognitive development, positive social behaviors, and energy to carry out school activities. With this in mind, therefore, identifying the nutrition knowledge, attitudes and practices of primary school learners’ parents can support the effort towards alleviating the burden of child malnutrition. This study, though it also includes other socio economic variables, chiefly relies on the effects of women’s relative status in their household as well as community on their children’s nutrition security, specific to Mkoba South.

## **1.4 Research Questions**

- 1.4.1 To what extent are the parents of learners in Mkoba South schools aware of good nutritional aspects?
- 1.4.2 What attitudes are displayed by the parents of learners in Mkoba South schools towards good nutrition?
- 1.4.3 What practices are exhibited by the parents of learners in Mkoba South schools regarding nutrition?

## **1.5 Assumptions**

This study will be conducted under the following assumptions: -

- The sample size chosen represents the study population.
- Responses from the participants will represent the true situation on the ground.
- There is need for Nutrition Education.

## **1.6 Significance of the study**

The information gathered through this research, will be used as the basis for the assemblage of recommendations for a nutrition education program directed at the parents of learners, particularly the mothers who are the primary care-givers, in order to improve their food choices regarding the feeding of their children. The study is also an attempt to improve conformity with dietary guidelines by coming up with dietary advice that is scientifically sound, practical, culturally sensitive and consistent. Lack of proper

education and illiteracy amongst caregivers, parents and children add to the growing malnutrition epidemic. Children cannot make suitable food choices and are dependent on caregivers and parents to make choices. The choices are, sadly, reflective of a poor income status. Even though studies to assist in assessing nutritional status have been done, nothing significant has been done on nutrition education (NE) as a strategy to improve the quality of life and address malnutrition.

The main purpose of this study is to assess the nutrition knowledge, attitudes and practices within the Mkoba South community and promote NE with the aim of improving nutrition knowledge and food choices, to encourage a better quality of life and improve performance of learners. According to the FAO (2005), people in many countries are not eating correctly because of poverty and poor NE. This study also seeks to establish the relationship between nutrition-related practices and nutrition knowledge and nutrition-related attitudes. The findings may be useful to the study schools, and other development partners dealing with education and health of school going children in order to draw up interventions to improve nutrition-related practice. The findings may also be used to review policies and implementation strategies related to nutrition and health of school children. The findings, it is hoped, will contribute to the on-going research efforts on the role of nutrition education in improving nutritional status of school children. It is also anticipated that the findings will be circulated through publication in peer reviewed journals and references.



## **1.7 Delimitations of the study**

The study is limited to the parents of learners in Mkoba South schools. There are four primary schools in Mkoba South and this comprises the total population under study. The participants to be involved in study reside in various villages in Mkoba South, that is, villages 1, 2, 3, 9, 10 and 11. The results drawn from this research study will not be generalized because of the small sample used.

## **1.8 Limitations of the study**

The anticipated limiting factors include that of time. The research will be conducted as and when the various participants can be all present. Another limiting factor will be the selection of the appropriate language for use during the Focus Group Discussions (FGDs). It is likely that some of the participants will not be able to converse or hold discussions in English. Results of this study can only be generalized to parents who have children attending primary school in Mkoba South as well as those from similar socio-economic backgrounds and geographical locations.

## **1.9 Definition of Terms**

**Food insufficiency:** - Food insufficiency is when an individual or a family has limited access to availability of food or a limited and uncertain ability to acquire food in socially acceptable ways (Jyoti *et al.*, 2005).

**Food insecurity:** - An inability to acquire appropriate foods in a socially acceptable way.

**Nutrition attitudes:** - organized and consistent ways of thinking, feeling, and reacting toward food and nutrition.

**Nutrition Education:** - Is the process by which people gain the knowledge, attitude and skills necessary for developing good dietary habits and other nutrition related practices conducive to health and well-being (Contento, 1995; FAO, 2005a).

**Nutritional knowledge:** - This refers to awareness and knowledge of various nutrition concepts, and knowing how these concepts translate into particular food choices. Comprehension of basic principles and concepts as measured through the administration of a valid test.

**Nutrition practices:** - These are the food choices and other food and nutrition related actions that people undertake in order to achieve an intended effect and are the direct focus of nutrition education, ( Contento, 2007)

## **1.10 Acronyms**

ADHD - Attention-Deficit-Hyperactivity Disorder

FAO - Food and Agriculture Organization

FFQs - Food Frequency Questionnaires

FGDs - Focus Group Discussions

KAP - Nutrition Knowledge, Attitudes and Practices

NE - Nutrition Education

NEP - Nutrition Education Programme

NKS - Nutrition Knowledge Survey

PAR - Participatory Action Research

SCT - Social Cognitive Theory

SLT - Social Learning Theory

UNICEF - United Nations Children's Education Fund

WFP - World Food Programme

WHO - World Health Organization

## **1.11 Summary**

The chapter highlighted the importance of the study and the problem statement was discussed. The chapter discussed the significance of the study and the background of the study. The purpose of the study and research questions was highlighted in the chapter. Limitations and delimitations of the study were included as well as the justification of the research problem. Chapter one also defined the key terms of the study. The chapter closed with a summary of key issues discussed in the chapter. The next chapter will focus on theoretical framework that supports the research problem.

## CHAPTER 2

### REVIEW OF RELATED LITERATURE

#### 2.1 Introduction

This chapter provides an overview of the following perspectives:-

- Nutrition:- Good nutrition and Malnutrition
- Nutritional requirements of young children
- Nutritional knowledge, attitudes and practices
- Nutrition Education

#### 2.2 Nutrition

Nutrition is outlined by the World health Organization (WHO), (2006) as being a fundamental pillar of human life, health and development across the entire life span. Nutrition is said to be the sum total of the processes involved in the intake and utilization of food substances by living organisms, including ingestion, digestion, absorption, transport and metabolism of nutrients found in food (Melvin, 2006). Good nutrition is therefore, the foundation for survival, health and development for current and succeeding generations. Well-nourished children perform better in school, grow into healthy adults and in turn give their children a better start in life (UNICEF, 2006). Good nutrition, thusly, provides the energy and nutrients essential to sustain life and promote physical, social, emotional, and cognitive development (El-Nmer, Salama, Elhawary, 2014).

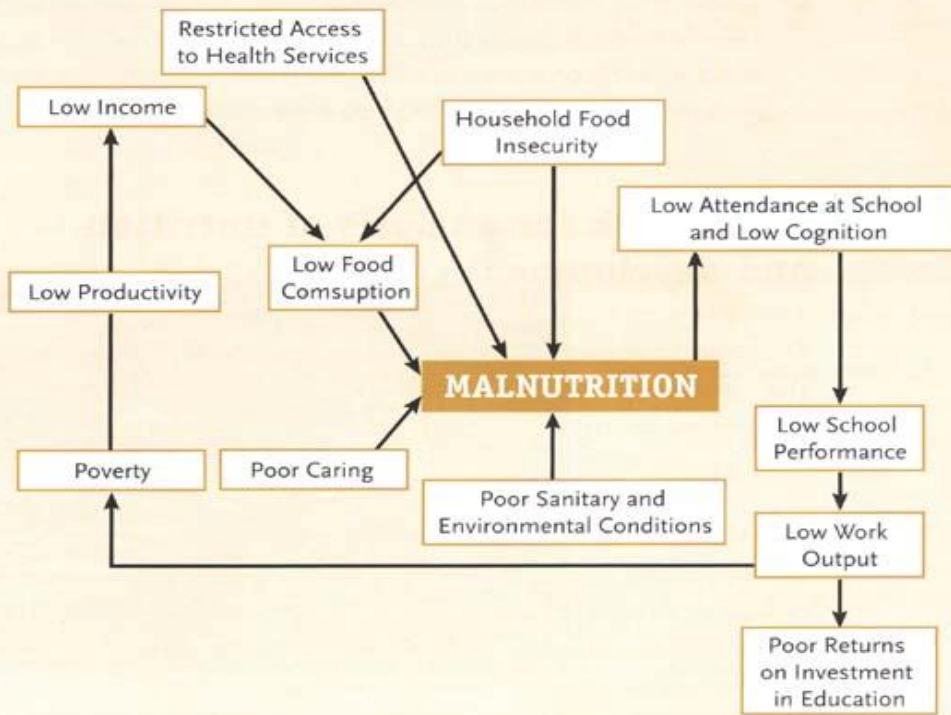
The body grows at an alarming rate during early childhood. After the first year, this rate slows down and may occur in spurts throughout childhood, adolescence, and puberty. A

child requires an adequate dietary intake to provide enough nutrients and energy for growth, without reducing the body's ability to stay healthy. Also, almost half of the adult skeletal mass is built during adolescence. A healthy diet, that is rich in calcium and other essential vitamins and minerals, is crucial for optimal skeletal and physical growth, (El-Nmer *et al.*, 2014). When children have poor diets, it does not only have direct negative effects on their weight and health, but results in significant deficiencies in those nutrients playing an essential role in cognitive development as well.

The growth pattern of a child becomes disrupted when there is a deficiency in the amount and nutritional value of the food consumed, owing to nutrient deficiencies, (Labadarios, 2005). Nutritional status of children is a manifestation of a host of factors including household access to food and how this food is distributed within the household, availability and utilization of health services, and the care provided to the child. The extent of hunger can also be linked with low energy intake, low micronutrient intake and poor income levels. This affects growth patterns of children negatively (Labadarios, 2005). The author further explains that malnutrition can cause physical, cognitive and psychological impairment, which over time causes permanent learning disabilities. The framework illustrated below shows how the afore mentioned host of factors lead to the overall malnourishment of children. The framework was first developed by the Food and Agricultural Organization of the United Nations in 1999 and has since been widely used by scholars as a source of reference.

FIGURE 3

Framework for Analysis of Nutrition and National Development



Adapted from FAO, 1999. Field Programme Management

*(Adapted from FAO, 2004, p. 34)*

The World Health Organization (WHO) refers to malnutrition as the failure of cells to perform their physical functions due to inability to receive and use the energy and nutrients needed in terms of amount, mix and timeliness. Waterlow & Insel (1995) in Labadarios (2005) described malnutrition as failing health that results from long standing faulty nutrition that either fails to meet or greatly exceeds nutritional needs. This description could be inferred to mean inappropriateness of the food taken. Again, Harrison & Waterlow (1990) in Labadarios (2005) defined malnutrition as the effects of any nutrient deficiency including energy, protein and micronutrients.

Malnutrition can be defined as a lack of essential nutrients or failure to use available foods to best advantage (Barasi, 1997). Malnutrition affects physical growth, morbidity, mortality, cognitive development, reproduction and physical work capacity and consequently, has an impact on human performance, health and ultimate survival. According to Salah, Nnyepi & Bandeke (2006), a well-nourished child is one whose weight and height measurements compare superbly with the standard normal distribution of heights and weights of healthy children of the same age and sex. In this perception, malnutrition is not less food or food without the needed nutrients present. It is somewhat the failure of cells to perform their physiological functions due to inability to receive and utilize the nutrients in the right proportion.

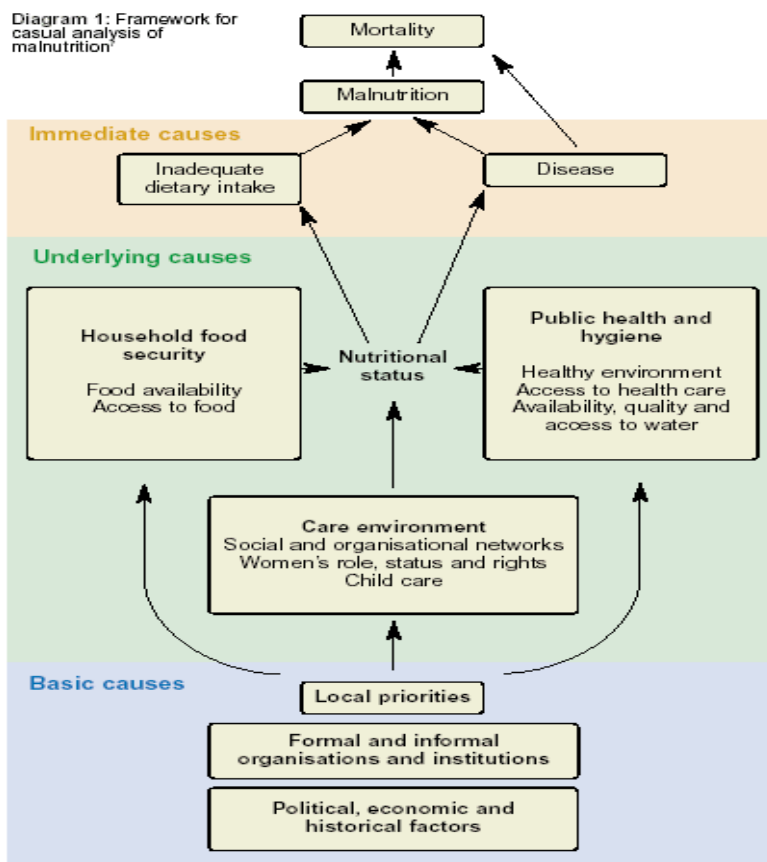
Children's food preferences and keenness to try new foods are prejudiced by the people around them (Brinkman, 2013). The eating behaviors that children practice early in life affect their health and nutrition, which are significant factors in childhood overweight and obesity, (Clark, Goyder, Bissel, Blank & Peters, 2007), and possibly will continue to shape food attitudes and eating patterns through adulthood. Child-feeding practices ordinarily determine the availability of various foods, the portion sizes that children are offered, the frequency of eating occasions, and the social contexts in which eating occurs, (Clark, *et al.*, 2007) Parents can influence children's dietary practices in various ways, such as the availability and accessibility of foods; meal structure and environment; adult food modeling; food socialization practices; and food-related parenting styles. Furthermore, family meals may also certainly contribute to children's nutrition beliefs and attitudes as well as to the onset and persistence of overweight in primary school children, (Salah, *et al.*, 2006).

Even though children may seem to possess an inherent ability to self-regulate their energy intake, their food environment affects the degree to which they are able to exercise this ability. Offering large food portions (especially of high calorie, sweet, or salty foods), feeding practices that pressure or restrict eating, or modeling of excessive consumption can all undermine self-regulation in children. The best advice, possibly, regarding child-feeding practices continues to be the division of responsibility between adult and child advocated by Satter and Madson, (Clark, *et al.*, 2007). The role of parents and other caregivers in feeding, according to this division, is to provide positive structure, age-appropriate support, and healthful food and beverage choices. Children are responsible for whether they should eat and how much to eat from what adults provide. Children's attitude concerning likes and dislikes may also be influenced by the mothers' attitudes of serving foods.

Appoh & Krekling (2005), showed that mothers' practical knowledge about nutrition has important implication on the nutritional status of children and they also indicated that improved women's relative household status leads to better nutritional status of children which seems important particularly in developing countries where women have lower social and economic status. According to Alemu, *et al.*, (2002), mother's knowledge about care giving practices could affect child nutrition status in which caregivers can identify the symptoms associated with child malnutrition. In addition, they tried to deduce that the type of the care givers' employment was found to have a more profound impact on child nutrition. According to them, child malnutrition was high in Ethiopia because women are less powerful relative to men or their spouses.



According to the United Nations Children’s Fund’s framework for the causes of child malnutrition and the subsequent extended model of care as presented in Engel, Menon, and Haddad (1999), as cited in Smith & Haddad (2000). It presents a useful generalized understanding of how child’s nutritional status and/or health are the outcomes of a multi-sectoral development problem that can be most effectively analyzed in terms of immediate (the most proximate level), underlying, and basic (the deepest level) causes.



*Adapted from (UNICEF, 1990, p. 58)*

The framework above, illustrates that a child’s nutritional status is the result of the interactions between the child’s dietary intake and the child’s health status, at the immediate level. Smith & Haddad (2000) argue that a child whose dietary intake is

inadequate is more susceptible to disease and, disease in turn depresses appetite, inhibits the absorption of nutrients in food, and competes for a child's energy as well. Therefore, dietary intake must be adequate in both quantity and quality, and nutrients must be consumed in appropriate combinations for the human body to be able to absorb them.

Conversely, the immediate determinants themselves are stated to be influenced by three underlying determinants manifesting themselves at the household level. Thus, since the immediate determinants of a child's health and nutrition usually are decisions made by the household in which the child lives, i.e., given assets, prices, and community endowments, a natural starting point is the determination of child's health and nutrition at the household level. Food security, adequate care for mothers and children, and a proper health environment and services are the underlying determinants for malnutrition, as stated in the framework.

According to the conceptual framework, the availability of resources determines the degree to which the three underlying determinants are expressed, positively or negatively. For instance, food security can be achieved when the household has the resources available for food production, food purchase or if the household receives donations of food from outside sources. In the same way, care, which is quoted in Smith & Haddad (2000) as the provision in households and communities of time, attention, and support to meet the physical, mental, and social needs of the growing child and other household members, is determined by the caregiver's control of economic resources, autonomy in decision making, and physical and mental status. The caregiver's status

relative to other household members influences all of the resources for care. A final resource for care is the caregiver's knowledge and beliefs.

The third of the underlying determinants of child nutritional status, health environment and services, depends on the availability of safe water, sanitation, health care, environmental safety as well as shelter. The framework reveals that poverty is the key factor affecting all underlying determinants. Smith & Haddad (2000) articulated that the effects of poverty on child malnutrition are all-encompassing. Scholars have argued that poor households and individuals are unable to achieve food security, have inadequate resources for care, and are not able to make use of, neither can they contribute to the creation of resources for health on a sustainable basis.

Finally, the framework shows that the underlying determinants of child nutrition (and poverty) are, in turn, influenced by basic determinants, which include the potential resources available to a country or community, limited by the natural environment, access to technology, and the quality of human resources. The utilization of these potential resources and how they are translated into resources for food security, care, and health environments and services are affected by political, economic, cultural, and social factors (Smith & Haddad, 2000).

Malnutrition means "bad nutrition", literally, and in technical terms, includes both over and under nutrition. Malnutrition may involve under-nutrition which includes the symptoms of deficiency diseases, or it might be as a result of over-nutrition arising from excessive intake of nutrients (Barasi, 1997). With developing countries in mind, under

nutrition is generally the main issue of concern, though industrialization and changes in eating habits have increased the prevalence of over-nutrition. Nonetheless, within the context of World Food Program (WFP) programs and assessments, malnutrition refers to under-nutrition unless otherwise specified, (WFP, 2005). WFP (2005) defines malnutrition as a state in which the physical function of an individual is impaired to the point where an individual can no longer maintain adequate bodily performance processes such as growth, pregnancy, lactation, physical work and resisting and recovering from disease.

Under-nutrition and under-nourishment also indicate a condition where there is insufficient intake of food to cover energy and nutrient needs. Insufficient intake of food that results in malnutrition could be attributed to varied reasons (Morley & Woodland, 1992) in Smith & Haddad, (2000). Under-nourished children have lowered resistance to infection; they are more likely to die from common childhood ailments such as diarrheal diseases and respiratory infections, and for those who survive, frequent illness affects their nutritional status, trapping them into a vicious cycle of recurring sickness and faltering growth. Their plight is largely invisible; three quarters of the children who die from causes related to malnutrition were only mildly or moderately undernourished, showing no outward sign of their vulnerability, (UNICEF, 2006).

### **2.3 Nutritional Requirements of young children**

A child needs a sufficient dietary intake to provide enough nutrients and energy for growth, without reducing the body's ability to stay healthy. The most visible evidence of

good nutrition is taller, stronger, healthier children who learn more in school and become productive, happy adults, who participate in society, ( WHO/BASICS/UNICEF, 1999).

Healthy snacks between meals enable the child to have enough energy and grow well. Some healthy snacks are fruits, vegetables, boiled eggs, sour milk, bread, sweet potatoes, boiled or roasted maize cobs, fried fish, chapatis, bean cakes, nuts and oilseeds, (FAO, 2009).

All people need the same basic nutrients, i.e. essential amino acids, carbohydrates, essential fatty acids, and twenty-eight vitamins and minerals, in order to maintain life and health. However, the amounts of the nutrients required change from one stage of the human life cycle to the next. Young children require a higher calorie intake relative to body size to facilitate physical and mental development.

A healthy diet, one that is rich in calcium and other essential vitamins and minerals, will enable optimal skeletal and physical growth. When children's diets are poor, this does not only have direct negative effects on their weight and health, but also results in significant deficiencies in those nutrients playing a crucial role in cognitive development.

Children are required to eat a variety of foods from each food group to ensure optimal intake of all vitamins and minerals. Simultaneously, they may face new challenges regarding food choices and habits. Decisions about what to eat are to some extent determined by what is provided in school, at home, the influences from friends at school, and the media, especially television.

Studies on infant and child feeding practices conducted by Linkages (2004) in the Northern Ghana showed that the food often offered to this category of children is unfortified, plant based and bulky. These foods thus, fail to meet their needs for certain micro nutrients particularly, iron, zinc, calcium and vitamins.

A summary of nutrients traditionally considered important in certain amounts for a healthy diet (British Nutrition Foundation, 2005) as cited in Sorhaindo & Feinstein, (2006: 7 - 8):-

### ***Zinc***

Zinc is found in protein-rich foods such as meat, shellfish, dairy products, bread and cereals. It is found to help with the production of new cells and enzymes. It helps process protein, fat and carbohydrates and with the healing of wounds. However, excess zinc can lead to anaemia and weakening of bones.

### ***Iron***

Iron is found in liver, meat, beans, nuts, dried fruit, whole grains (brown rice), soybean flour and dark leafy vegetables, for example spinach. Iron helps with the production of red blood cells that carry oxygen around the body.

### ***Sugars (glucose/sucrose)***

Sugars, such as sucrose, fructose, and maltose, are naturally found in fruit and milk, but are added to many other manufactured foods.

### ***Carbohydrates***

Carbohydrates are found in sugars and starch and are a major source of energy. In terms of sugars there are two types: extrinsic, not part of the cellular make-up of a food,

e.g. table sugar, honey; and intrinsic, part of the cellular make up of the food, e.g. in whole fruits and vegetables. Starch can be found in items such as potatoes and bread.

### ***Thiamin (Vitamin B1)***

Thiamin is found in pork, vegetables (especially peas), milk, cheese, fresh and dried fruit, eggs, whole grain breads and some breakfast cereals. It helps to break down and release energy from the food that one eats and also helps to maintain nerves and muscle tissue.

### ***Essential fatty acids***

There are two categories of essential fatty acids: unsaturated fat found in oily fish, avocados, nuts and seeds, sunflower and vegetable oils; and saturated or trans-fat, found in meat, cheese, butter and pastry. Essential fatty acids help the body to absorb vitamins and are also a source of energy. However, too much fat, particularly saturated and trans-fat, leads to weight gain and increased cholesterol in the blood that leads to heart disease.

### ***Sodium chloride (found in salt)***

The amount of sodium needed can easily be obtained from a healthy diet. Too much can raise blood pressure, potentially leading to heart disease and stroke.

### ***Fibre***

Fibre is a type of carbohydrate found in plants and is important for digestion.

### ***Protein***

Children have a high need for protein to support muscle growth and development. Protein is essential for growth and repair of the body. The main sources of protein include meat, fish, eggs, milk, cheese, cereals and cereal products (e.g. bread), nuts and pulses (beans and lentils).

### ***Calcium***

Calcium is mainly important for the development and maintenance of bones and teeth. The primary source is milk, cheese and other dairy products.

### ***Vitamin A (Retinol)***

Vitamin A is important for the function of the skin and mucous membranes. It is also essential for vision and the immune system. It is related to cell differentiation and thus is crucial for growth and development. Vitamin A is normally found in liver, milk, cheese and butter, and can also be found in vegetables such as carrots and leafy vegetables.

### ***Vitamin C***

Vitamin C is responsible for the formation of connective tissue found in skin, cartilage and bone and is thus part of the healing process from injury. It is also implicated in the development of blood vessels and in neurological function. It is mostly found in fruits and vegetables, but can also be sourced in milk and liver.

### ***Folate***

As with Vitamin A, Folate is important for normal cell division that preludes growth and development. It is also partly responsible for the formation of blood cells. Folates are found in liver, yeast extract, orange juice and green leafy vegetables.

During the primary school years, a greater proportion of meals are usually eaten away from home in the school setting. Most of these snacks consumed are either high fat foods, sugary or just plain starchy. Snacks contribute significantly towards the proportion of total daily energy and nutrient needs of the school child. Hence, poor snack choices result in too many high-energy, low-nutrient foods. For example, salty snacks, such as packets of crisps or puffed corn (maputi), may be poor value as they give few nutrients.



Children who are both physically active and growing need to replenish periodically throughout the day. It is the crucial role for parents and other caretakers to help children make nutritious snack choices. Frequent snacking may result in the loss of appetite during the main meal. Therefore, a healthy snack should be less in size or quantity to the amount of a regular meal and taken at least 2 hours before a regular meal.

Below is an illustration of suitable snacks for children:



*Adapted from (Gillard, 2003, p. 10)*

## **2.4 Nutritional Knowledge, Attitudes and Practices (KAP)**

### **2.4.1 Nutritional Knowledge**

It is generally assumed that those who know basic concepts and principles of nutrition will apply this knowledge when making food choices. For the purposes of this research paper, "Knowledge" refers to facts, information, and skills gained through experience or education and understanding of an issue or phenomenon. The role of nutrition

information on food choice is based on the process by which individuals acquire and understand the nutrition information, possibly in combination with other relevant information (Anderson, Milburn & Lean, 1995). In this regard, food choices are taken as a function of a cognitive information-handling process. This cognitive process is the integration between exposure to nutrition information and dietary decision. This will in turn ultimately determine the nutritional adequacy of an individual's diet (Anderson, *et al.*, 1995).

According to Polton (1981) as cited in Ntuli (2005, p. 31), a correlative link between nutrition knowledge and dietary intake is still inconclusive. The latter author reported a widespread lack of correlation between nutrition knowledge and the application of that information outside the classroom. Likewise, Picardi (1981) as cited in Ntuli (2005, p. 31), reported that correlation of nutrition rankings with health concerns and food choices was disappointing. However, Sims & Smiciklas-Wright (1981) also as cited in Ntuli (2005, p. 31), "suggested that these studies were aimed at a cognitive level only. They ignored personal attributes that influence dietary behavior such as attitudes, beliefs and values and thus failed to recognize the particular environment's resources that influence dietary behavior."

It has been suggested through research, that knowledge awareness related to nutrition and health captures people's attention. It also increases awareness and enhances motivation. Practical knowledge (i.e. the how to knowledge) is the kind that people need when they are already motivated. Knowledge and skills, otherwise called "Behavioral capabilities" are the kind of skills that people need in order to act on their motivations

(i.e. instrumental knowledge) (Contento, 1995). Hence, the degree of connection between nutrition knowledge and dietary behavior may well point towards the types of nutrition information people or learners are exposed to and respond to. However, research has also shown that nutrition knowledge is a necessary but not sufficient factor for changes in nutrition-related practices, but may play a small but central role in the adoption of healthier food habits (Worsley, 2002).

According to Ntuli (2005, p. 34), “a variety of models, theories and frameworks are used to guide, implement and evaluate nutrition knowledge, such as the Social Learning Theory (SLT) (Harnack, Block & Lane, 1997, p. 307) and the Social Cognitive Theory (SCT) (Neumark-Sztainer & Palti, 1997, p. 196).” An understanding of various concepts and objectives of nutrition knowledge might be provided by a combination of these models. These models take into consideration the challenges to successful dissemination of nutrition information. Harnack, Block & Lane (1997, p. 307) as cited in Ntuli (2005, p. 34) affirmed that “The SLT provides a framework for understanding the potential independent and joint influences of nutritional knowledge, beliefs, psychosocial and environmental factors on food selection. Within the context of the SLT, nutrition knowledge and beliefs are one of the factors that influence dietary behaviour, as well as health status.”

There is need for people to understand how nutrition terms translate to specific food choices. They should also be aware of which nutrients should be consumed in greater and lesser quantities. In practice, this means people need to know what foods to buy, where to buy and how to prepare and cook them. This may aid dietary change in the

presence of an enabling and facilitating environment, for example when resources are available. Thus, it is indicated that people might manifest inadequate nutritional status based on scarce nutritional knowledge (du Plessis, 1998).

Nutrition Knowledge Survey (NKS), according to Parmenter & Wardle, (1999) in Contento (2007), is a measure that tests knowledge of healthy eating and adequate nutrition that can affect one's dietary behavior. According to the authors, nutrition knowledge serves as a proxy for nutrition-related behavior. The support for this emanates from a series of empirical investigations demonstrating strong positive relationships between nutrition knowledge and eating behaviors (Hoogenboom, Morris, Morris, & Schaefer, 2009). The measure takes the form of a test that provides a score of overall food and nutrition knowledge.

#### **2.4.2 Nutrition Attitudes**

It has been suggested by research that attitudes may be as important as demographic characteristics in the translation of nutrition knowledge into actual food consumption behavior. Attitudes are emotional, motivational, perceptive and cognitive beliefs that positively or negatively influence the behavior or practice of an individual. "Attitudes" refers to viewpoints, perspectives, reactions, or settled ways of thinking about aspects of, in the case of this research, child nutrition. An individual's feeding or eating behavior is influenced by his/her emotions, motivations, perceptions and thoughts. Attitudes influence future behavior no matter the individual's knowledge and help explain why an individual adopts one practice and not other alternatives. The terms attitude, beliefs and

perceptions are interchangeable, (Macías & Glasauer, 2014). Attitudes may be related to cultural beliefs founded in common experience.

According to Macías & Glasauer (2014), attitudes are measured by asking the respondents to judge whether they are positively or negatively inclined towards:

- a health or nutrition problem;
- an ideal or desired nutrition-related practice;
- following nutrition recommendations or food-based dietary guidelines;
- food preferences; or
- food taboos.

### **2.4.3 Nutrition Practices**

The term “practices” is defined as the observable actions of an individual that could affect his/her or others’ nutrition, such as eating, feeding, washing hands, cooking and selecting foods. Practice and behavior are interchangeable terms, although practice has a connotation of long-standing or commonly practiced behavior. Poor nutrition practices are more often than not associated with inadequate food intake and unhygienic dietary practices.

Nutrition-related practices, according to Macías & Glasauer (2014), are discussed in terms of:-

- Dietary diversity (quality of the whole diet)
- Intake of specific foods
- Frequency of intake of specific foods and

- Specific observable behaviours.

## **2.5 Nutrition Education (NE)**

NE is regarded as a food-based strategy, which allows for community empowerment through information. FAO (2008) classify it as a change process whereby beliefs, attitudes and influences are changed to promote improved nutritional practices consistent with individual needs and available resources. NE is a means of promoting lifelong healthier eating habits by educating people in making the right food choices and in carefully preparing and preserving foods which have a good nutritional value (FAO, 2008). NE is imperative as it ensures a better and more diversified food supply. According to Contento (2007), NE is any combination of educational strategies, accompanied by environmental supports, designed to facilitate voluntary adoption of food choices and other food- and nutrition-related behaviors conducive to health and well-being. NE is delivered through multiple venues and involves activities at the individual, community, and policy levels, (Contento, 2007).

Decision-making is advocated for at all levels when the intervention covers various levels of the population, i.e. parents, children and the elderly, and ought to address the needs of the school, scholars and teachers (FAO, 2008). NE takes into account current knowledge, how to improve that knowledge and involves promoting healthier eating habits within cultural restrictions. Attitudes, knowledge and skills of young people can be changed so that they understand the link between food and nutrition. The people who will benefit from NE can act as change agents by imparting the message to a larger segment of the population, (Vijayapushpam, Rao, Antony & Rao, 2008). The aim of NE

is to promote movement from a knowledge orientation to a behavioural orientation (Contento, Randel & Basch, 2002).

NE does not only involve imparting information or submitting messages, but also getting people to do something different to improve nutrition (Contento, *et al.*, 2002). NE aims to encourage change through a learning process with voluntary action towards changing eating patterns being the outcome (Contento, *et al.*, 2002). Family and community involvement is encouraged for further improvement. The focal point must be on behavior and active learning (Sherman & Muehlhoff, 2007). It is of great importance to consider improving the knowledge of nutrition and health practices of parents and children, and incorporating community members within these strategies.

Findings in Bangladesh, India, recorded a large number of women in rural 29 areas with a very low literacy level and poor knowledge of good health practices. The authors propose that providing nutrition education and guiding participants with correct food practices may assist in the reduction of the critical situation of malnutrition, which is further worsened by cultural norms, including early marriages and discrimination against girls in food allocation (Roy, Bilkes, Islam, Ara, Tanner, Wosk, Rahman, Chakraborty, Jolly & Khatun, 2008). Community participation can be seen as a system which can lessen the causes of malnutrition by bridging the gap between knowledge, policy and action.

According to FAO (2008), the effectiveness of a Nutrition Education Program (NEP), is determined by the following:

- the length and intensity of the intervention;
- the involvement of children, teachers and families to ensure continuous dissemination and understanding of information;
- full commitment to ensuring that the program is carried out correctly and to its full potential;
- family involvement, which enhances effectiveness and encourages variety within a diet;
- offering feedback and self-assessment of the children to assist in obtaining effectiveness within a NEP;
- creating supportive nutrition-friendly environments; and
- strengthening community knowledge and emphasizing the importance of locally produced foods and eating behaviors (FAO, 2008).

A study by Zoellner, Bounds, Connell, Yadrick & Crook (2010) proposed that in order for community involvement to take place, the nutrition education messages must be encouraging, and provide knowledge. The routes and messages utilized must however be culturally relevant and delivered according to the cultural context of the community. Food supply is based on cultural and traditional practices. The NEP, therefore, is based on access to food and factors influencing choice. Sherman & Muehlhoff (2007), conducted a study in Zambia, during which parents and teachers reported an improvement in children's reading, food intake, hygiene practices such as washing hands, and physical activity. The school, parents' involvement with homework, reminder



messages communicated on a daily basis and community participation as a whole were the ways through which the NEP was encouraged.

## **2.6 Summary**

Parents and caregivers should select a variety of foods from each food group to ensure that children's nutritional requirements are met. Some children grow up in food-insecure households with inadequate diets due to both the amount of available food and the quality of food. Growing up in a food-insecure household can lead to a number of problems. Deficiencies in iron, zinc, protein, and vitamin A can result in stunted growth, illness, and limited development. Children's poor diet does not only have direct negative effects on their weight and health, but also results in significant deficiencies in those nutrients playing an essential role in cognitive development. The role of parents and other caregivers in feeding is to provide positive structure, age appropriate support, and healthful food and beverage choices.

Children are responsible for whether and how much to eat from what adults provide. Mothers' attitudes of serving foods may influence children's attitude concerning likes and dislikes. Providing sound nutrition knowledge can contribute to healthier food choices, when resources permit. NE can encourage the individual to make better quality food choices only if the resources and opportunity avail themselves. Education is an important element in improving the income levels of individuals, which in the end promotes healthier and better food choices.

This chapter reviewed some of the related literature and brought to light some important information concerning the nutritional requirements of primary school children, KAP as well as the basics on NE. The next chapter deals with the details of the research methodology.

## CHAPTER 3

### RESEARCH METHODOLOGY

#### 3.1 Introduction

This chapter outlines the methodology to be used to approach the research problem. The research design, population and sample selection, administration of data, data collection and capturing are explained. Limitations of the design as well as the criteria for admissibility of the data are identified.

#### 3.2 Research design

According to Leedy (2005), research design is a road map that depicts the direction format and theoretical structure underpinning the study. White (2000), argues that a research design includes the aims of the research, the final appropriate methodology, the data collection techniques one intends to use and the chosen method of data analysis and interpretation and how all this fits in the literature. For the purpose of this study the participatory action research method was adopted.

According to MacDonald (2012), Participatory Action Research (PAR) is an option in qualitative research methodology that ought to be considered and understood. Qualitative research integrates the methods and techniques of observing, documenting, analyzing, and interpreting characteristics, patterns, attributes, and meanings of human phenomena under study (Gillis & Jackson, 2002; Leininger, 1985) as cited in MacDonald (2012, p. 34),. The purpose of qualitative methodology is to describe and understand,

rather than to predict and control (Streubert & Carpenter, 1995). Qualitative methods focus on the whole of human experience and the meanings ascribed by individuals living the experience; broader understanding and deeper insight into complex human behaviors thus occurs as a result (Lincoln, 1992; Mason, 2006) as cited in MacDonald (2012, p. 35). Lincoln (1992) also in MacDonald (2012, p. 35) argued that qualitative methods are naturalistic, participatory modes of inquiry that disclose the lived experiences of individuals. As a result, “there are no single, objective reality, there are multiple realities based on subjective experience and circumstance” (Wuest, 1995, p. 30) in MacDonald (2012, p. 35),

PAR is considered democratic, equitable, liberating, and life-enhancing qualitative inquiry that remains distinct from other qualitative methodologies (Kach & Kralik, 2006) as cited in MacDonald (2012, p. 35). Using PAR, qualitative features of an individual’s feelings, views, and patterns are revealed without control or manipulation from the researcher. The participant is active in making informed decisions throughout all aspects of the research process for the primary purpose of imparting social change; a specific action/s is the ultimate goal.

Participatory methodologies produce rich multimodal and narrative data guided by participant interests and priorities, putting the methods literally in the hands of the participants themselves and allowing for greater access to social research knowledge beyond the academy, (Gubrium & Harper, 2013). Participatory, in this regard, refers to “... methodologies, approaches, or techniques that afford the ‘subject,’ ‘community member,’ and/or ‘field site’ greater narrative latitude when it comes to ethnographic

knowledge production and a larger role in determining why and how research outcomes are produced and received by lay and academic audiences alike”, (Gubrium & Harper, 2013, p. 16).

Participatory action research (PAR) is considered a subset of action research, which is the “systematic collection and analysis of data for the purpose of taking action and making change” by generating practical knowledge (Gillis & Jackson, 2002, p. 264). In an ideal world, the purpose of all action research is to impart social change, with a specific action/s as the ultimate goal (McNiff & Whitehead, 2009, p. 26).

PAR is regarded as “systematic and orientated around analysis of data whose answers require the gathering and analysis of data and the generation of interpretations directly tested in the field of action” (Greenwood & Levin, 1998 p. 122). Action research involves an action researcher and community or organization members who are in search of ways to improve their situation. “Therefore, action research is concerned with an agenda for social change that embodies the belief of pooling knowledge to define a problem in order for it to be resolved.” ( Greenwood & Levin, 1998, p. 122).

*“The ultimate aim of PAR is the empowerment of oppressed individuals to partner in social change, which encourages capacity development and capacity building of all who participate (McTaggart, 1997). The collaboration of individuals with diverse knowledge, skills, and expertise fosters the sharing of knowledge development. Individuals also learn by doing, which strengthens their belief in their abilities and resources, as well as further develops their skills in collecting, analyzing, and utilizing information (Maguire,*

*1987). The PAR process is potentially empowering, liberating, and consciousness-raising for individuals, as it provides critical understanding and reflection of social issues (Greenwood, Whyte, & Harkavy, 1993; Greenwood & Levin, 1998; McTaggart, 1997). Ideally, it is the community group, in collaboration with the researcher, which determines what the existing social issues are, and which one(s) they want to eliminate or change (Maguire, 1987)", (MacDonald, 2012, p.40),*

Participatory research is conducted directly with the immediately affected persons, the aim is the reconstruction of their knowledge and ability in a process of understanding and empowerment. This is expressed concisely by Fals-Borda & Rahman in MacDonald, (2012) who define PAR as the "enlightenment and awakening of common peoples," among other things. PAR has the potential for both capacity development and capacity building for all those who participate.

In spite of the number of strengths, PAR also presents a number of challenges for the researcher and the participants. The first challenge relates to the diversity in meanings of PAR, and the interchangeable use of terms such as 'action research,' 'PAR,' and 'participatory research' which might be confusing. PAR can also be challenging due to its inclusion of community members in the research team, who may struggle to maintain their commitment to the research project over time (Gillis & Jackson, 2002) as cited in MacDonald (2012, p. 40).

### **3.3 Population and Sample**

#### **3.3.1 Population**

Chiromo (2009, p. 16), defines population as “all the individuals, units, objects, or events that will be considered in a research project”. A population can then be said to be the large group to which the researcher wishes to generalize the results of the study. Identification of the target population, is fundamental in the construction of a study sample. This study focused on the primary care-givers of learners from the primary schools in Mkoba South. There were four schools under consideration, namely, Budiriro Primary School, Bumburwi Primary School, Chikumbiro Primary School and St Paul’s Primary School. The study population was, therefore, composed of the caregivers and the primary school children attending the above mentioned schools and who gave consent to participate in the study.

#### **3.3.2 Sample**

A sample is defined as the smaller group or subset of the selected population Chiromo (2009). The purpose of a sample is to represent the entirety of a larger group, therefore, it is a fraction of the target population providing general characteristics required for the study. Sample size is also determined to some extent by the style of the research. Due to the nature of the research design adopted, the sample drawn from the population comprised of 10 participants who formed the focus group.

The researcher was and still is working with a group of mothers under non-formal education. 10 of them gave consent to partake in the study and became the focus

group of the research. These participants were an ideal sample for a couple of reasons. Firstly, they already were familiar with the researcher, hence were free to open up and be active participants. Secondly, even though they were and still are attending non-formal education lessons at Budiro Primary school, seven (7) of them have children at the other 3 schools within the target population.

Thus a purposive sample was used for the study. This is a non-probability sample technique (Leedy & Ormrod, 2005). Convenience sampling confines a sample to an accessible section of the population (Kumar, 1999) and was used in this study for the purpose of choosing the respondents. The respondents were easily identified, and all the caregivers and primary school children from the target population could have been included.

### **3.4 Instrumentation**

In line with the research design adopted, it is recommended that at least three selected methods be used to transcend the limitations of each individual one, so as to triangulate data generation and produce more effective problem-solving, (Streubert & Carpenter, 1995). Focus groups, participant observation and field notes, interviews, diary and personal logs, questionnaires, and surveys are effective methods of data generation employed in PAR (Gillis & Jackson, 2002). For the purposes of this research, focus groups, food frequency questionnaires, and observation were the methods of choice for data collection.



### **3.4.1 Focus groups**

A focus group is a form of qualitative research in which a group of people are asked about their perceptions, opinions, beliefs and attitudes towards a product, service, advertisement, concept or idea. Questions are asked in an interactive group setting where participants are free to talk with other group members, (Marshall & Rossman, 2006).

A focus group generally consists of 7 to 12 individuals who share certain characteristics relevant to the focus of the study (Marshall & Rossman, 2006). The small number of individuals in a focus group facilitates an environment for best possible communication amongst all participants, thus increasing the potential for useful data to be generated. During a focus group, the researcher aims to create a supportive environment in which discussion and differing points of view are encouraged (Marshall & Rossman, 2006). Ideally, in PAR, all participant contributions are recognized and valued, as all participants have an opportunity to communicate (McTaggart, 1991) as cited in MacDonald, (2012, p. 41)

### **3.4.2 Food Frequency Questionnaires**

Typically, a questionnaire consists of a set of logical questions presented to a respondent for answers. The respondents read the questions, interpret what is expected and then respond individually and appropriately. “Food Frequency Questionnaires (FFQs) are a type of dietary assessment instrument that strives to identify an individual’s

usual food consumption by questioning the frequency at which the respondent consumed food items based on a predefined food list.” (Coates, Colaiezzi, Fiedler, Wirth, Lividini & Rogers, 2012, p. 30). Given that food lists are culturally specific, FFQs need to be adapted and validated for use in different contexts. They are particularly good for estimating the usual diet and for understanding the relationship between certain consumption patterns and health outcomes.

Coates, *et al.* (2012), assert that FFQs are usually self-administered but interviewer-administration can be done occasionally, for example, when literacy is low. FFQs are basically used to obtain frequency and, in some cases, portion size information about food and beverage consumption over a specified period of time, typically the past month or year. A Food Frequency Questionnaire (FFQ) can therefore be best described as a limited checklist of foods and beverages with a frequency response section for subjects to report how often each item was consumed over a specified period of time. Food-intake checklists, short food-frequency questionnaires and nutrition behavior checklists are adequate to find out about food practices of a population (Macías & Glasauer, 2014). For the purposes of this study, the FFQ was prepared by compiling locally available foods and beverages that are mostly and generally packed for learners’ lunches, as well as foodstuff that is not only locally available but nourishing too.

### **3.4.3 Observation**

Observation is a method of data collection in which researchers make a survey within a specific research field. It is sometimes referred to as an unobtrusive/inconspicuous method. Qualitative observations are more open-ended and based on the inductive

approach, (Ary, Jacobs & Sorensen, 2010). For this study, the researcher opted to be a complete observer (the researcher observes as an outsider and does not tell the people they are being observed). This was with the hope that whatever was to be discussed during the focus group sessions would take effect on the participants and help to bring about some change. This anticipated change was to be observed through behavior change which would be evident in the participants making some positive improvements in what they pack for their children's lunch boxes. The researcher, through this type of observation, was aiming to avoid the Hawthorne effect.

### **3.5 Data collection procedures**

Approval to conduct the study will be secured from the relevant authorities prior to data collection. This will be done by firstly obtaining an approval letter from the Midlands State University. The letter will then be used to seek permission from the Ministry of Primary and Secondary Education to conduct the research. Thereafter, the researcher asks for permission from the head of Budiriro Primary School to conduct Focus Group Discussions (FGDs) at the school. The next step will be to obtain consent from participants who will be assured of both confidentiality and anonymity where necessary. All information as well as the purpose of the study will be explained to the participants.

The researcher facilitated all the FGDs and recorded all the necessary data. The discussions were useful in collecting in-depth information on nutritional knowledge, attitudes and practices. The FFQs were distributed during one of the FGDs, these helped to ascertain the food that is commonly consumed by learners whilst at school,

and also gave some insight into the nutritive adequacy of the meals. Covert observations were then conducted and noted as part of the data collection process.

All data collection was performed by a single researcher.

### **3.6 Data analysis plan**

Qualitative data from the FGDs was first transcribed and then coded by assigning labels to variable categories. Common themes were established and clustered in a patterned order to clarify variables. Inferences were made from particular data under each theme then conclusions drawn from the findings. The data obtained through the FFQs was presented in graphs (see appendix III) and analyzed accordingly. Observations were made covertly and wherever possible, pictures were obtained (see appendix II). Selected samples of the pictures were presented. The findings from the three data collection tools were then triangulated and final conclusions drawn.

### **3.7 Summary**

The chapter provided an outline of the research design, target population, sampling techniques, instrumentation, the data collection procedures as well as the data analysis plan. The next chapter will focus on presentation and analysis of the data that will be gathered.

## CHAPTER 4

### DATA PRESENTATION, ANALYSIS AND DISCUSSION

#### 4.0 Introduction

This chapter focuses on presenting, analyzing and also discussing the data collected for the study. The data is presented according to the findings of the various tools used for the purposes of the study, i.e. observation, food frequency questionnaire and focus group. Firstly, the data will be processed according to the findings of each of the research tools used, and then a discussion ensues. Triangulation of the findings from the research tools will be made in the discussion in an attempt to answer the research questions.

#### 4.1 Data Presentation and Analysis

**4.1.1 Research question 1 which says, to what extent are the parents of learners in Mkoba South schools aware of good nutritional aspects?** Findings from the Food Frequency Questionnaire, the Observation and the Focus Group Discussion will be outlined first followed by a discussion of these findings in an attempt to answer the research question.

##### 4.1.1.1 Findings from Food Frequency Questionnaire (FFQ)

The FFQs reflected poor nutritional knowledge. This was realised after the data had been tallied. The findings show that some of the respondents admitted to providing starch based foods and sweetened beverages, mostly, for their children's lunch (see

appendix I). This indicates poor or lack of knowledge on the importance of meals that provide adequate nutrition for the growing learners.

#### **4.1.1.2 Findings from Observation**

The observations revealed that the learners mostly consumed carbohydrate rich food such as Pasta, Mealies, Drop scones, Potatoes, Bread, Rice, Biscuits, Home-made bread, Sadza, Puffed corn and Jiggies (see appendix II). Some of the samples of pictures from the observation are shown below:-



It was also noticed that some of the learners did not bring any food to eat whilst at school. This reflects quite poorly on the parents' awareness of their children's nutritional requirements.

#### **4.1.1.3 Findings from Focus Group**

During the focus group discussion, the respondents reflected very little and some had no knowledge of any nutritional aspects (see appendix III). This was reflected in the poor responses to the functions of each of the major nutrients required for proper nutrition. The respondents also admitted to being ignorant with regards to nutrients and good nutrition. The following is an extract from the FGD:-

*The discussion then commenced with the first question being on **the definition of the term nutrition.***

##### **Answers:-**

- *Nutrition is body building food*
- *Nutrition is healthy food*
- *Nutrition is food*

*From the demeanor of some of the respondents, it was noticed that they were not willing to give any answers. When prompted to say anything remotely related to the term, one of the respondents stated that they had no idea and the rest agreed with her.*

#### **4.2 Discussion of research question 1 which says, to what extent are the parents of learners in Mkoba South schools aware of good nutritional aspects?**

This research sought to ascertain the extent to which the parents of learners in Mkoba South schools are aware of good nutritional aspects. Knowledge is an intrapersonal determinant of food choice, which plays a role in determining what individuals eat (Contento, 2008). The findings of the research show that the parents lack adequate

knowledge on nutrition and are in need of nutrition education. Looking at the pictures shown in appendix II under results of the observation, the FFQ results (appendix III) and particularly the FDGs (appendix 1), it can be noted that ignorance is rampant. During the interview, it was noted that only a couple of the respondents had any form of idea about the term nutrition. When asked about nutrients, it was also noted that most had heard about these but had no idea about the sources or the functions of the nutrients. These findings had been anticipated due to the observations made by the researcher.

A study conducted in Australia by Zarnoweicki, Sinn, Petkov & Dollman (2012), tested the nutritional knowledge of parents and found parental nutritional knowledge was a predictor of the quality of nutrition of children. This, however, may be an oversimplification of the relationship between nutritional knowledge and behaviors, as complex food related behaviors' encompass a multitude of personal, social and environmental influences (Contento, 2007).

The findings of this research also agreed with the study conducted by Al-Shookri Al-Shukaily & Al-Tobi (2011) in Oman, who showed that there was a positive relationship between children's dietary food intake and the mothers' nutritional knowledge. Nutritional knowledge was related to dietary intake, highlighting the fact that nutrition-related education and information for mothers can improve their offspring's dietary intake in Oman.

Ignorance and lack of education affects knowledge of women in the understanding and preparation of adequate nutrition as well as in the understanding of what a balanced diet



is. Therefore they may have the food available but may not know the right mix and servings for a child. Interest in nutrition is a predictor of nutrition knowledge, as adults with an interest in the topic will try to gather information in this area, with the degree of nutritional knowledge tied not only to health outcomes, but also to health and nutritional literacy (Miller *et al.*, 2010). Parental interest and recognition of the importance of nutrition are related to the amount of nutritional information parents (Zarnowiecki *et al.*, 2012).

**4.3.1 Research question 2 which says, what attitudes are displayed by the parents of learners in Mkoba South schools towards good nutrition?** Findings from the Food Frequency Questionnaire, the Observation and the Focus Group Discussion will be outlined first followed by a discussion of these findings in an attempt to answer the research question.

#### **4.3.1.1 Findings from Food Frequency Questionnaire (FFQ)**

When the responses given by the respondents show poor food choices regarding the nutritive value of the food that they pack for their children, regardless of other reasons for such choices, points towards a negative attitude. Such were the findings from the FFQs. Due to the fact that the FFQS only show the frequency with which particular food items are served / consumed, the deductions made from this are purely subjective and as such, the researcher had included some items that would test the respondents' attitudes. The findings revealed that some of the respondents did not really care about what they gave to their children as long as they had given them something (see

appendix II). An example of such an item was “jolly Juice” which is an artificially sweetened beverage with no nutritive value.

#### 4.3.1.2 Findings from Observation

It would appear as though, the children were given whatever was available so as not to come to school without food. Since the observations were done over some period of time, it was clearly noted that most the learners brought the same type of food for the entirety of the observation period. This to the researcher depicted a somewhat negative attitude towards good nutrition by the learners’ parents/guardians. Some of the samples of pictures that can be seen in appendix II are as follows:-



#### **4.3.1.3 Findings from Focus Group Discussion (FGD)**

The attitudes displayed, as deduced from the FGD, revealed that the respondents were claiming to have a positive attitude towards their children's nutrition although this, however, was dampened by various reasons (see appendix 1). These reasons which led to the negativity above include low or no income from the main breadwinner due to unemployment, poverty and ignorance as was pointed out by the respondents. Below is an extract from the FGD findings in appendix I:-

*The researcher then tried to explain and clarify the term nutrition. Good and bad nutrition were discussed and the following were given by the respondents as **causes of bad nutrition.***

- *Ignorance*
- *Poverty*
- *Eating the same type of food*
- *Eating fruits without washing them – eg buying a mango and eating without washing it.*

#### **4.4 Discussion of research question 2 which says, what attitudes are displayed by the parents of learners in Mkoba South schools towards good nutrition?**

This research also sought to find out the kind of attitudes displayed by the parents of learners in Mkoba South schools towards good nutrition. "Attitudes" refers to viewpoints, perspectives, reactions, or settled ways of thinking about aspects of parenting or child development, including parents' roles and responsibilities. Attitudes may be related to cultural beliefs founded in common experience. The findings showed that parents claim

to have concern over what they feed their children at school but due to varying reasons were in most cases unable to do what was beyond their reach, hence tended to portray a somewhat negative attitude towards their children's nutritional status.

In the study conducted in Oman by Al-Shookri *et al* (2012), the effect of both levels of mother's education and work on their attitudes toward healthy eating were shown. The results showed that, as the educational level of the mother increased, their attitudes toward healthy eating also increased. However, in the case of this study, the respondents had minimal education hence the negative attitude towards good nutrition for their children and families at large.

The demographic characteristics of the respondents in this study show that they are all not formally employed and to use their own words rely on "piece jobs". Their main effort is to simply put food on the table regardless of the nutritive value of the food. According to them, as long as the child has something to eat at school, but if there is nothing to give them then so be it, the child goes to school without.

The findings also reflected that some, if not all of the respondents, might have reached Ordinary Level, but attained very poor results (see appendix III). A study by El-Nmer *et al* (2014) showed that the social class of parents, father's education, and mother's education has great influence on children's nutritional habits. The findings of the study by El-Nmer *et al* (2014) are in agreement with the findings of this research.

**4.5.1 Research question 3 which says, what practices are exhibited by the parents of learners in Mkoba South schools regarding nutrition?** Findings from the Food Frequency Questionnaire, the Observation and the Focus Group Discussion will be outlined first followed by a discussion of these findings in an attempt to answer the research question.

#### **4.5.1.1 Findings from Food Frequency Questionnaire (FFQ)**

The findings showed that the food most frequently served were those that provide carbohydrates only and sweetened beverages that also provide carbohydrate. These reflected poor nutritional practices by the parents/guardians (see appendix I).

#### **4.5.1.2 Findings from Observation**

The observations made showed that the learners who brought packed lunch to school mostly carried food rich in carbohydrates only. There were, however, some learners who brought nothing to eat (see appendix II), indicating poor nutritional practices since children require adequate food throughout the day.



#### 4.5.1.3 Findings from Focus Group Discussion (FGD)

From the FGD, it is evident that the respondents did what they could to feed their children even under difficult situations and conditions as evidenced by the food they admitted to pack for their children's lunch boxes (see appendix III). Below is an extract from the appendix:-

*During the interview, the respondents were first asked to write down the meals that they had had for supper the previous evening, for breakfast on the day of the interview and the food they had packed for their children's lunch. The responses were as follows:-*

**a) Packed lunch**

- Rice
- Jiggies

- *Puffed corn (maputi)*
- *Bread*
- *Potato chips*
- *Biscuits*
- *Cereal drink (Maheu)*
- *Pasta and soup*

The respondents outlined factors such as poverty and ignorance as the major causes of their practices. Regardless of the circumstances, the practices displayed generally were beyond what is essential in terms of the learners' nutritional requirements. Hence the practices displayed by the respondents were deemed poor.

#### **4.6 Discussion of research question 3 which says, what practices are exhibited by the parents of learners in Mkoba South schools regarding nutrition?**

The practices exhibited by the parents of learners in Mkoba South schools regarding nutrition were the last key question of this study. The findings showed that the parents in question did what they could to feed their children. Ignorance and poverty seemed to be the core determinants of the nutritional practices. Given that during the FGD, some of the respondents gave aspects above as the reasons behind their actions. As shown, also, by the quality of food observed in some of the learners' lunch boxes and the fact that some learners do not bring any lunch at all – a fact which was shown by the FFQ. Low income is a major barrier to healthy eating. Deprived households are more likely to have unhealthy food and insufficient amounts of food. Families with limited finances are

under pressure to buy foods that are higher in energy and as shown in this study these are chiefly carbohydrate sources.

Poor nutrition practices are usually associated with inadequate food intake and unhygienic dietary practices. Household food security is compromised by deficiencies in knowledge about nutrition, budgeting, food purchasing and preparation methods.

According to Sorhaindo & Feinstein (2006), a qualitative research project based on interviews with Irish mothers highlighted the important relationship between diet and poverty. However, the ability to pay for particular types of food often dictates diets that are ultimately consumed. Among these mothers, despite a strong desire to feed their children healthy food and awareness of the components of a healthy diet, income limitations forced them to choose meals with lower nutritional content.

It was found in this research that what these parents pack for their children is attributed to by a number of factors. Among these factors are ignorance of the whole concept of nutrition regarding children's health requirements, socio-economic factors, level of education as well as poor hygiene practices which in some instances they are unaware of and cultural beliefs for example that eating plenty of sadza will make a child grow.

The complexity of nutritional practices means that attitudes operate in combination with nutritional knowledge and ultimately influence the behaviors that are crucial for a healthy diet.



## **4.7 Summary**

The findings of this study, which aimed to assess the nutrition knowledge, attitudes and practices within the Mkoba South community and promote nutrition education with the aim of improving nutrition knowledge and food choices, to encourage a better quality of life and improve performance of learners, were presented, analysed and discussed in this chapter. The data was processed, first, according to the findings of each of the research tools used, and then a discussion ensued. This was done for each of the research questions. The next chapter summarizes and concludes the research study as well as making recommendations for any follow-up studies.

## **CHAPTER 5**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.**

#### **5.0 Introduction**

Presented in this chapter are ; the summary of the research study, the conclusions reached after the findings were analysed and the recommendations for follow-up course of action or any further studies to be undertaken as a result of this research.

#### **5.1 Summary**

The primary purpose of this study was to examine the extent of the nutrition knowledge, attitudes and practices of primary school learners' parents in Mkoba South. This was with the hope to endorse nutrition education with the aim of improving nutrition knowledge and food choices, to promote a better quality of life into adulthood through children's nutritional intake inside and out of school. More specifically, an attempt was made to accomplish the following objectives: (1) assess parents' knowledge of nutrition regarding primary school learners; (2) determine attitudes displayed by the parents towards good nutrition; (3) establish the practices exhibited by the parents; and (4) develop valid tools for the collection of data. All this was highlighted in the first Chapter.

Chapter 2 was used to form the literature sections of the report and contain the theoretical content that is essential for understanding this project. This literature was based on the recommendations of other researches. The literature reviewed highlighted

different aspects of nutrition in relation to the dietary requirements of primary school learners. Research increasingly supports the important connection between nutrition and learning potential. Healthy eating is essential for learners to achieve their full academic potential, mental growth, and lifelong health and well-being. When children are not receiving proper nutrition they are unable to reach their full potential. Lack of proper education and illiteracy amongst caregivers, parents and children add to the growing malnutrition epidemic. Children cannot make suitable food choices and are dependent on caregivers and parents to make choices. The choices are, sadly, reflective of a poor income status. Even though studies to assist in assessing nutritional status have been done, nothing significant has been done on nutrition education (NE) as a strategy to improve the quality of life and address malnutrition.

Chapter 3 gives a clear explanation of the methodology engaged in this study and how it was used to find possible answers to the problems posed by this study. Since this research was qualitative in nature, the research design opted for was Participatory Action Research (PAR). This study focused on the primary care-givers of learners from the primary schools in Mkoba South. The schools in the study zone were Budiro Primary School, Bumburwi Primary School, Chikumbiro Primary School and St Paul's Primary School. Due to the nature of the research design opted for, the sample drawn from the population comprised of 10 participants who formed the focus group. The sampling technique employed was purposive/ convenience. In line with the research design adopted, focus groups, food frequency questionnaires, and observation were the methods of choice for data collection. The three methods were used to transcend the

limitations of each individual one, so as to triangulate data generation and produce more effective problem-solving.

Chapter 4 was reserved for data analysis and discussions. Data presentation for each of the three research questions was laid down as follows:-

- Findings from the food frequency questionnaire
- Findings from observations
- Findings from the focus group
- Discussion of the research question highlighting the major findings in context of the reviewed related literature.

## **5.2 Conclusions**

### **5.2.1 Research question 1**

**To what extent are the parents of learners in Mkoba South schools aware of good nutritional aspects?**

From the research findings, it can be concluded that the parents' nutritional knowledge was minimal due to lack of basic nutrition education. This might be as a result of the low levels of general education since most of the respondents had not done well at ordinary level. The lack of appropriate education and illiteracy amongst caregivers, parents and children add to the growing malnutrition wave. Children cannot make apt food choices and are reliant on caregivers and parents to make the choices for them.

### **5.2.2 Research question 2**

**What attitudes are displayed by the parents of learners in Mkoba South schools towards good nutrition?**

The study revealed that the parents reflected a mostly negative attitude towards the nutritional well being of their children, judging from the findings of the research. Good attitude towards nutrition plays an important role in improving nutrition practices.

### **5.2.3 Research question 3**

**What practices are exhibited by the parents of learners in Mkoba South schools regarding nutrition?**

From the samples of packed food observed over the course of study, most of these did not contain the required nourishing food as is evidenced by the attached pictures in appendix 3. Most of the food samples were rich in carbohydrate and deficient of proteins, vitamins and minerals, all of which are a prerequisite for a balanced diet. This therefore validates the poor practices by the parents.

## **5.3 Recommendations**

From what is evident from the findings, the researcher recommends the following:-

► **Nutrition Education (NE)**

The NE can be given in the following ways:-

1. The parents/ caregivers can attend non-formal education lessons on basic nutrition at the various primary schools which can offer these.

2. Community based workshops can be organised in order to disseminate crucial information on basic nutrition.
3. The learners ought to be taught about their nutritional needs so that they may pass the knowledge on to their parents/ caregivers. This would benefit only those parents/ caregivers who have the right positive attitude.
4. Community nutritionists could be employed to help distribute informative pamphlets on good nutritional aspects.

► School based feeding programs

- These programs, although already being implemented in some schools, are mostly focusing on orphans and vulnerable children (OVC). Focus could shift to include malnourished learners identified by the individual class teacher with the aid of the school nutritionist/ health teacher.
- The schools should liaise with the School Development Committees so that they establish school gardens and rear small livestock such as rabbits and poultry. This would ensure fresh produce for the feeding programs. The workforce could be volunteers from within the communities and could also be the parents of the learners benefiting from the feeding program.
- Ideally, people want to do away with the “Donor Syndrome”, however, it would widely benefit schools if they would seek or source donor funding to help supplement their own feeding program budgets.

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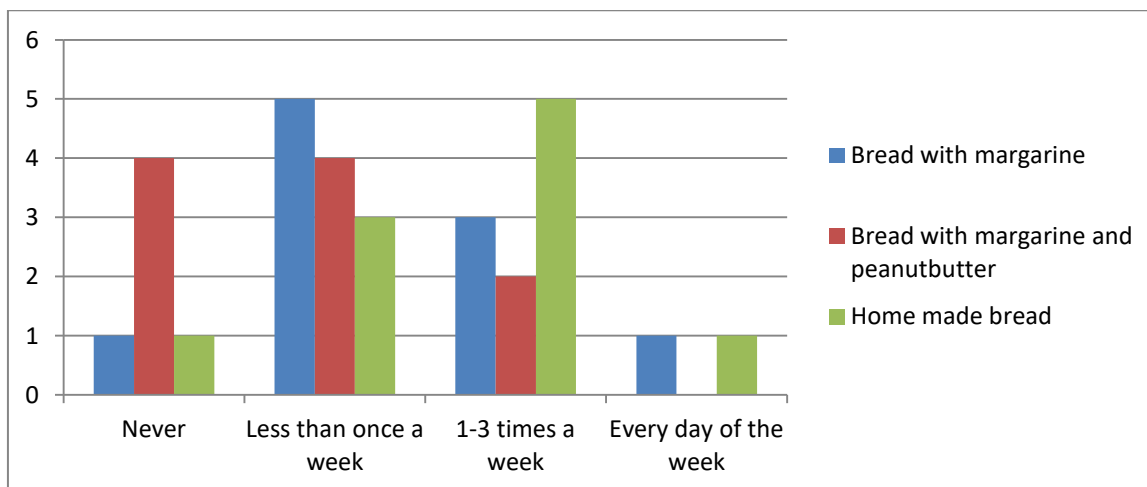
## APPENDICES

### Appendix I

#### Findings from the Food Frequency Questionnaire

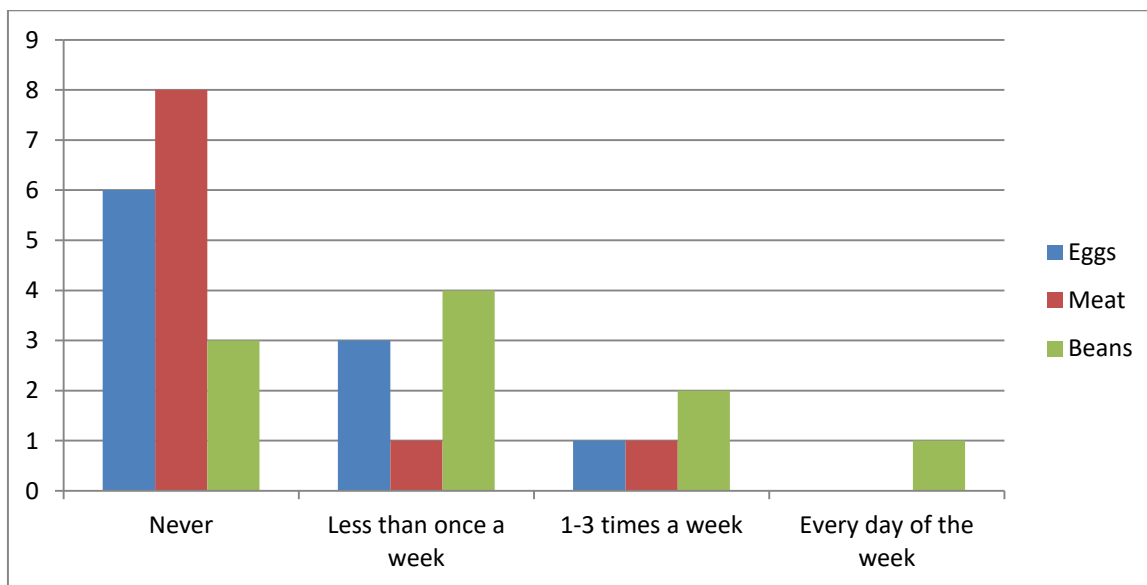
The purpose of the FFQ was to assess the frequency with which certain food items or food groups were consumed during a specified time period (i.e. less than once a week, 1-3 times a week, everyday of the week or never). The data from a Food Frequency Questionnaire is often used to classify subjects into broad categories of low, medium and high intakes of certain foods. The best method of assessing the food patterns for a group and/or individual, involves using a FFQ. The list of foods on the FFQ was mainly drawn from the initial observations made by the researcher. The other foods were included owing to their importance in the diets of children at primary school. The results of the FFQs given for this research paper were as follows:

#### Bread



This food group is one of the most commonly packed for learners. Whichever kind of bread, mainly supplies the body with carbohydrates which are for energy but on their own are not nearly enough for the needs of the growing learner. From the findings, it can be observed that bread enriched with peanut butter is not very popular, even though peanut butter is rich in protein which is an essential nutrient for growth. The frequency with which homemade bread is packed for the learners is much higher than that of bread with margarine and/or peanut butter.

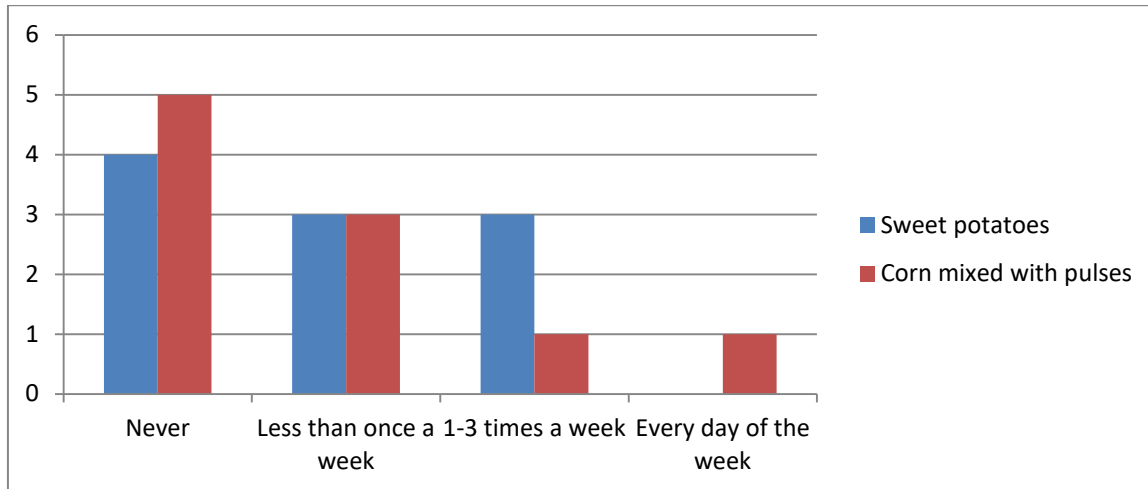
### Eggs, Meat, Beans



Eggs, meat and beans supply the body with protein, an essential nutrient needed for growth. It is clear from the findings that only a few respondents pack these for their children. Of the three, beans is at least given sometimes and even so, only by a few. The reasons for this occurrence could be varied and in the researcher's opinion could range from socio-economic factors to ignorance of the diet by the respondents.

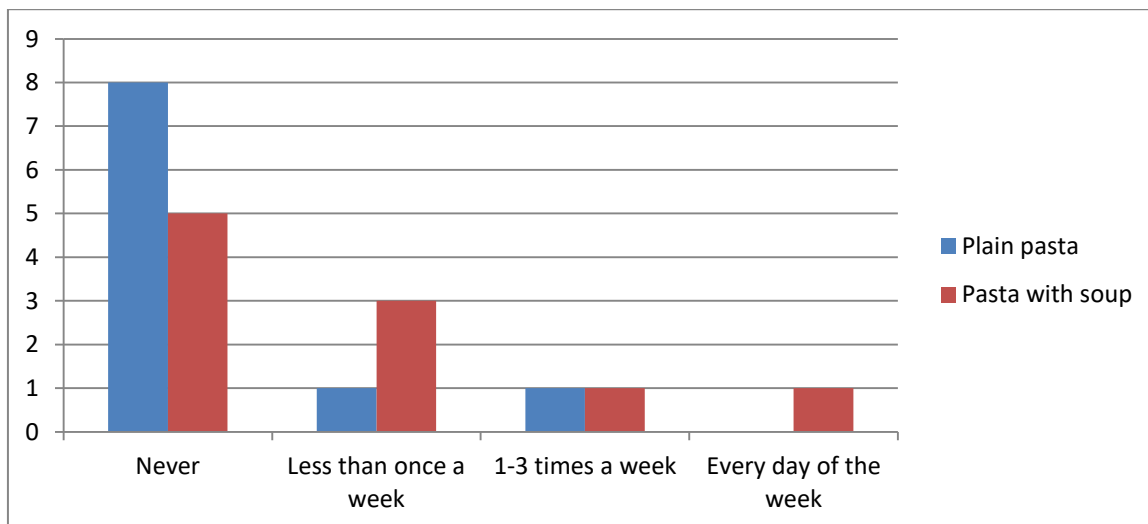


## Sweet Potatoes and Corn mixed with pulses (Mutakura)



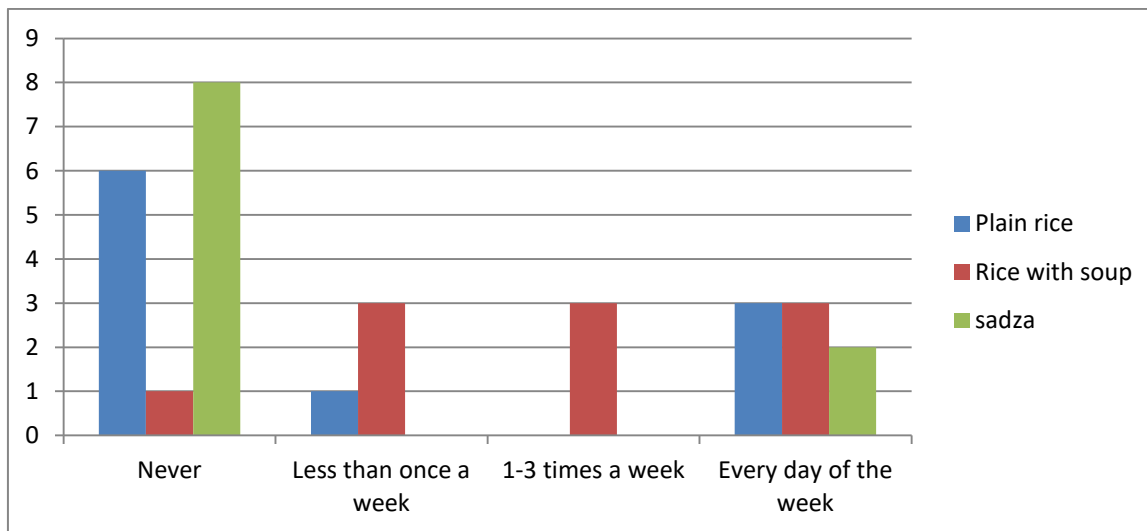
Although these two are considered to be seasonal, the researcher added them to the list to see how the respondents would deal with them. It turns out that sweet potatoes and *mutakura* are not very popular. Of two, *mutakura* would be the better choice as it has a wider selection of nutrients from the different ingredients used for its preparation.

## Pasta



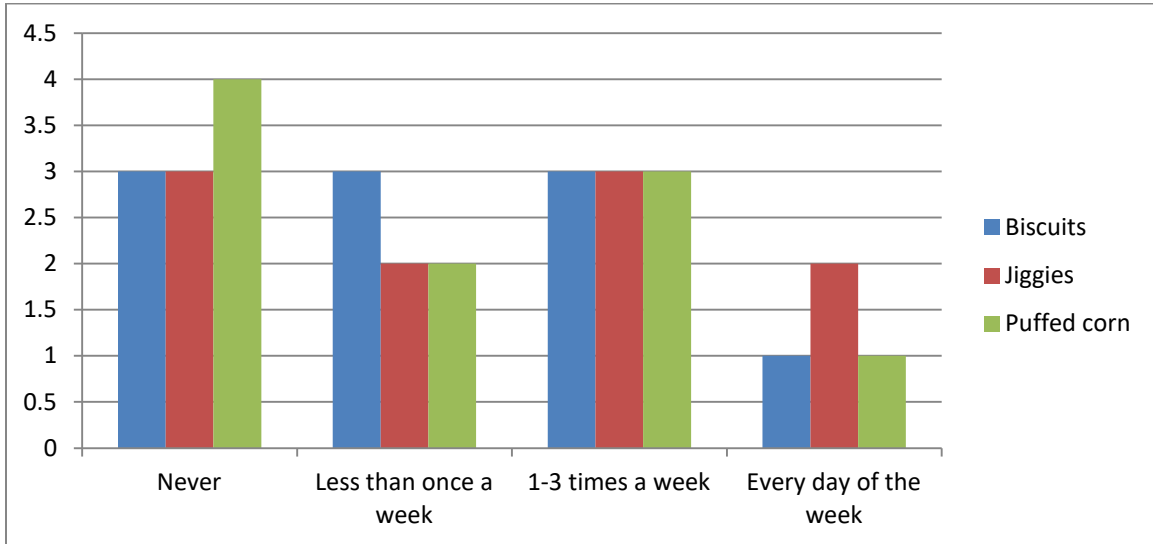
Even though the respondents claimed not to pack plain pasta for the learners, the observations made by the researcher suggest otherwise. Owing to its affordability, pasta is seen in most of learners' lunch boxes.

### Rice and Sadza



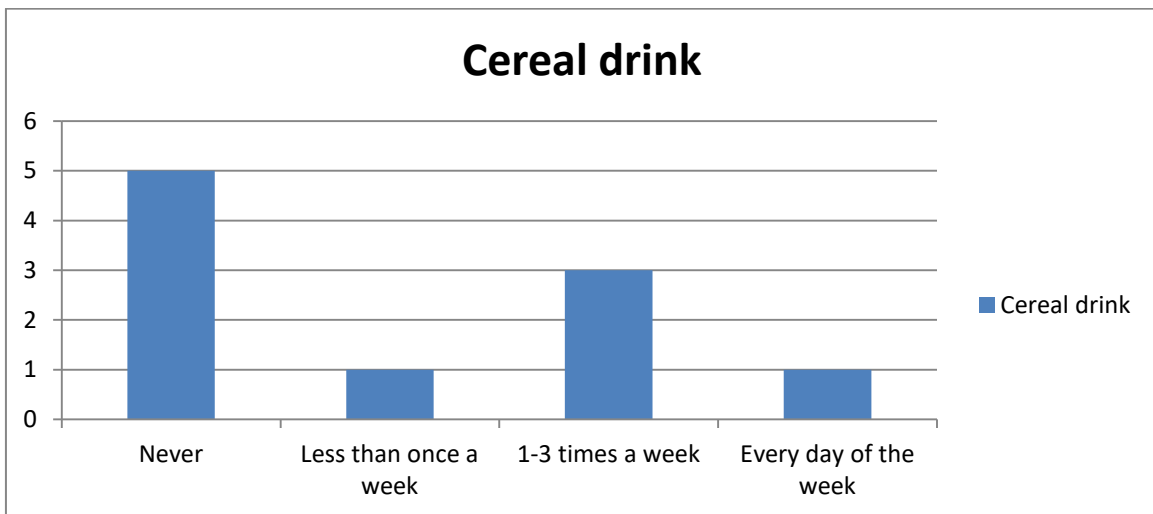
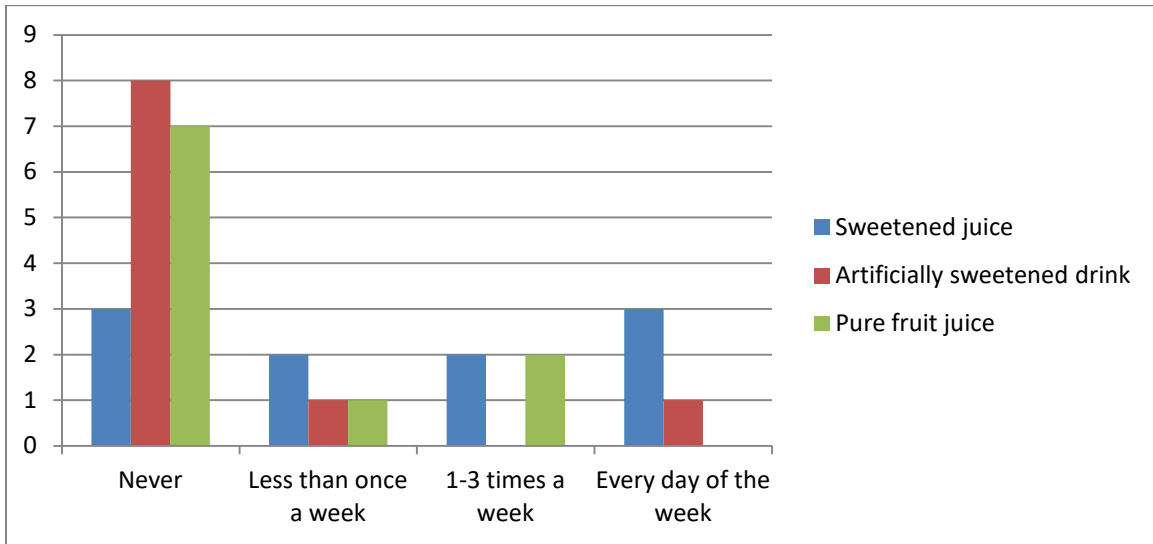
It appears that rice is amongst the most popular packed meals for school children. However, be it with or without soup or sauce, it still is a carbohydrate source, which as mentioned earlier is mainly for energy. Sadza served with any relish, is not very popular as most of the respondents claim to not pack it for their charges. However, the percentage that claim to do so every day of the week is rather highly unlikely in the researcher's opinion. This is because generally most learners do not want to bring sadza to school for fear of being ridiculed by their peers.

## Biscuits, Jiggies and Puffed corn ( Snacks)



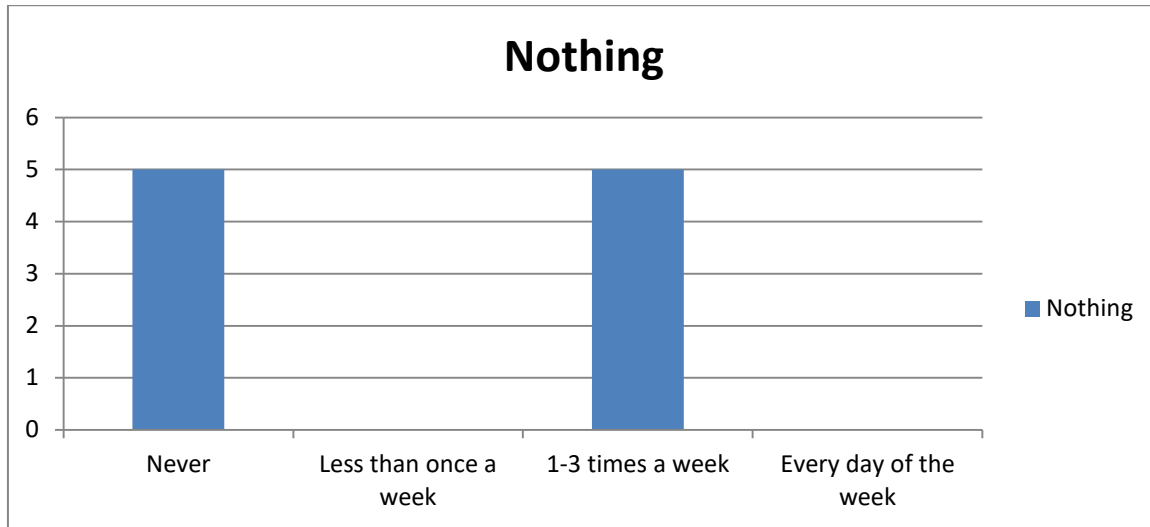
Snacks are meant to bind time in between main or major meals. They cannot constitute a meal in themselves. They are mainly full of carbohydrate, an energy nutrient. The results of the findings show that these snacks are in most cases taking the place of appropriate packed meals.

## Beverages



A beverage is said to be a hot or cold drink. There is a wide variety of beverages available. Some of these are nutritional, others refreshing and others are just plain unhealthy. Nutritional beverages, as the name implies, are those that provide nutrients and these are the recommended for the young learners. The healthy beverages include, among others, cereal drinks, milk and juice from fruits and vegetables. The results reveal that the healthy beverages are the least common.

## Nothing



The researcher intentionally put this option to test the truthfulness of the respondents. During the observation phase of the research, it had been noted that some learners indeed brought no food whatsoever to school for the entirety of the school week. The responses from the FFQ definitely confirmed the researcher's suspicions.

**Appendix II**

**Findings from the Observation**

Pic 1



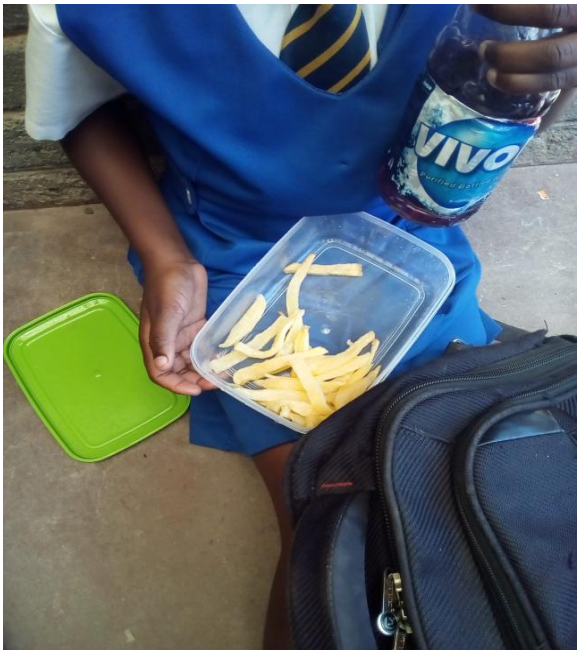
Pic 2



Pic 3



Pic 4



Pic 5



Pic 6



Pic 7



Pic 8



Pic 9



Pic 10



Pic 11



Pic 12





Pic 13



Pic 14



Pic 15



As can be observed from the above pictures, the food brought to school by the learners is chiefly sources of carbohydrates. Seen in the pictures from pic 1 to pic 15 are the following:- Pasta, Mealies, Drop scones, Potatoes, Bread, Rice, Biscuits, Home-made

bread, Sadza, Puffed cor and Jiggies. Clearly this does not, by any chance, provide the required nutrition for the learners, who as previously mentioned in the reviewed literature; need to have meals which are well balanced providing all the essential nutrients.

## Appendix III

### Findings from the Focus Group Discussion

#### Demographic characteristics of respondents

##### Age

<b>Less than 20</b>	<b>21 - 30</b>	<b>31 – 40</b>	<b>41 -50</b>	<b>above 50</b>
nil	20%	50%	20%	10%

##### Level of education

<b>Grade 7</b>	<b>High School drop-out</b>	<b>Ordinary Level</b>	<b>Advanced Level</b>	<b>College / University</b>
10%	30%	60%	nil	nil

##### Type of employment

<b>Unemployed</b>	<b>Self-employed</b>	<b>Employed full time</b>
70%	30%	nil

##### Number of children

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>more than 5</b>
nil	20%	40%	30%	10%	nil

##### Schools attended by children

<b>Budiriro</b>	<b>Bumburwi</b>	<b>Chikumbiro</b>	<b>St Paul's</b>
7	5	1	4

Some of the respondents had children attending different schools,

- 1) During the interview, the respondents were first asked to write down the meals that they had had for supper the previous evening, for breakfast on the day of the

interview and the food they had packed for their children's lunch. The responses were as follows:-

**b) Supper**

- Sadza was prevalent in all cases. The relish was somehow varied with the following being mentioned: -
  - Beef stew and rape
  - Beef stew only
  - Rape only
  - Fermented milk (lacto)
  - Fish

**c) Breakfast**

- Porridge was stated though not elaborated on what the particular type was
- Tea and bread
- One of the respondents mentioned eggs
- Rice and soup
- Another respondent stated that they had had nothing neither had they given anything to their children

**d) Packed lunch**

- Rice
- Jiggies
- Puffed corn (maputi)
- Bread
- Potato chips

- Biscuits
- Cereal drink (Maheu)
- Pasta and soup

2) The discussion then commenced with the first question being on **the definition of the term nutrition.**

**Answers:-**

- Nutrition is body building food
- Nutrition is healthy food
- Nutrition is food

From the demeanor of some of the respondents, it was noticed that they were not willing to give any answers. When prompted to say anything remotely related to the term, one of the respondents stated that they had no idea and the rest agreed with her.

3) The researcher then tried to explain and clarify the term nutrition. Good and bad nutrition were discussed and the following were given by the respondents as **causes of bad nutrition.**

- Ignorance
- Poverty
- Eating the same type of food
- Eating fruits without washing them – e.g. buying a mango and eating without washing it.

#### **4) Good hygiene practices.**

Where there are good hygiene practices, there is there is good nutrition. One of the respondents had the following to say about hygiene and nutrition:-

*“If you eat a mango without washing it and get sick, there is no longer good nutrition because the food you will be eating will not do what it was supposed to do in your body no matter how good it will be because your body will be weak. Therefore where there is hygiene there is good nutrition. Hygiene and health walk hand in hand. One cannot talk about food without talking about hygiene”.*

#### **5) Good nutrition**

**Answers:-**

- Different types of food
- Food with adequate nutrients, at least if you eat two of the nutrients for example carbohydrates and proteins rather than just eating one nutrient in a meal. If you eat at least two of the nutrients in a meal we can conclude that you have had good nutrition.

The researcher explained about the aspects of good nutrition elaborating on nutrients and briefly outlining the functions of each of the nutrients, then posed the following question.

**6) What if I have 5 kg rice, a sack of potatoes and mealie meal, what do I do, should I let the children go to school without eating because we only have carbohydrates?**

**Answers:-**

- One can cook rice with peanut butter
- One can cook rice with matemba
- But one does not have the peanut butter and matemba so what does one do?

Varying responses were given which ultimately led to a discussion on poverty.

**7) Poverty causes bad nutrition but what can we do to get rid of the poverty?**

- As women, we can do piece jobs so that our children can have enough food and achieve a balanced diet
- We can also do gardening and get vegetables, tomatoes etc. From the garden produce you can also sell so that you will get money to buy the other things / food that is needed. However if one does not have the space to do the gardening, that is when one should do piece jobs so that you will get money to start a business. Then from the money one can be able to buy food so that the children can have good nutrition and achieve a balanced diet.

**8) Comments on the meals written prior to the discussion**

**Answers:-**

- That is what we have at home but however that is not good

**9) What do you think the food that you are giving your children is doing to them?**

**Answers:-**

- Children will not have good nutrition

- Children will have stunted growth because the food they are eating is not building the body
- They can be constantly sick
- Can have kwashiorkor
- Can refuse to eat the food
- Can take or beg for other children's food
- Can feel lonely
- Can lead to low morale at school

**10)What can be done about your children's nutrition in relation to their performance at school?**

**Answers:-**

- One should strive to do the piece jobs so that children can have adequate food with the correct and a variety of nutrients so that they will not beg for other pupil's food at school
- The parent can explain to the child if there is one type of food and try and convince the child that as long as things get better, the parent will give him/her the food that s/he needs
- Can ask for the head of the school so that she can look for donors so that they can provide for healthy food to the children that are less privileged

11)To conclude the discussion/interview the respondents were asked to write down the food they ought to be packing for their children's lunch. The following were the responses:-



- Bread and a fruit
- Homemade bread (Chimodho)
- Fresh chips, eggs and sweetened drink (Mazoe)
- Bread with margarine and Bananas
- Rice, chicken, soup and bananas
- Homemade bread with peanut butter and an orange
- Bread, polony, drink, maputi, boiled egg and maheu
- Bread, eggs. Polony
- Boiled egg

## **Appendix IV**

### **Research tools**

#### **Focus Group Procedure And Protocol**

- Welcome
- Introductions
- The topic is Nutrition knowledge, attitudes and practices of primary school learners' parents in Mkoba South: Implications for nutrition education
- The results will be used for determining whether it is of importance that nutrition education be implemented and made available for the parents in Mkoba South.
- All of you were selected because it seemed more convenient since you attend non-formal education at this school. You all reside in different villages and some have children who attend other schools within the zone.

#### **Guidelines**

It is important to take note of the following:

- There are no right or wrong answers, only differing points of view.
- This discussion is being recorded, so please only one person speaks at a time.
- Since we already know each other, let us be on a first name basis.
- Let us respect each others' opinions and listen respectfully to what they have to say even if we do not agree with them.
- Please put your cell phones on silent and if you must respond to a call, please do so as quietly as possible and rejoin us as quickly as you can.

My role as moderator will be to see to it that the discussion keeps in focus of the purpose of the study.

If there are any questions, please let's address them now before we begin.

### **Main Interview Questions**

1. Write down what you and your family had for:-  
supper last night  
Breakfast this morning  
Packed for your children's lunch
2. What do you understand about nutrition?
3. After this discussion on nutrition, what can you say about the meals you wrote in question 1?
4. How do you think the general health of your children is being affected by the meals you are giving them?
5. What do you think are some of the things that you need to do for your children's health and performance in school activities to improve?
6. As a way of concluding this discussion, write down the food you ought to be packing for your children's lunch.

### **Concluding remarks**

Participants are reassured of confidentiality and anonymity. They are also reminded about the purpose of the discussion.

## Food Frequency Questionnaire

How often in the past 3 months did you pack the following for your children's lunch?

	Never	Less than one time a week	1 – 3 times a week	Every day of the week
Bread with margarine				
Bread with margarine and peanut butter				
Eggs				
Meat (eg, Polony, Sausage, etc.)				
Beans				
Home made bread (Chimodho)				
Sweet potatoes				
Corn with mixed pulses (Mutakura)				
Plain pasta				
Pasta with soup				
Sadza with any relish				
Plain rice				
Rice with soup only				
Biscuits				
Jiggies				
Puffed corn (Maputi)				
Fruits ( Mangoes, Bananas, Matamba, etc.)				
Sweetened juice (eg.Mazoe Orange crush)				
Artificially sweetened drinks (eg. Jolly Juice)				
Pure fruit juice				
Cereal drink (Maheu)				
Nothing				