

**EFFECTS OF NUTRITION ON GROWTH AND DEVELOPMENT OF CHILDREN.
MARAFA DIVISION, MARAFA VILLAGE, IN MAGARINI DISTRICT OF
COAST PROVINCE – KENYA. A CASE STUDY OF MARAFA
DIVISION**

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**A RESEARCH REPORT SUBMITTED TO THE FACULTY OF EDUCATION IN
PARTIAL FULFILLMENT OF A BACHELOR'S DEGREE IN SPECIAL
NEEDS AND PRIMARY EDUCATION OF KAMPALA
INTERNATIONAL UNIVERSITY**

NOVEMBER 2011

DECLARATION

I declare that this work presented is original and has never been done by anyone the way I have done it, neither has it been presented to any other Institution for the award of a degree.

SIGNATURE: 

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DATE: 19th 12. 2010

APPROVAL

This research report entitled: - Effects of Nutrition on Growth and Development of Children, has been submitted to Kampala International University with my approval as a University Supervisor

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MR. TUSIIME TWEBAZE RAMADHAN

DATE 28/12/2010

DEDICATION

This work is dedicated to my sister Constance Rehema Thoya, my beloved children: Sandra Uside Aswan, Melinda Pili for their support and finance which they gave me to carry out my studies

ACKNOWLEDGEMENT

I wish to extend my sincere thanks, appreciation and gratitude to all those who contributed positively towards the completion of this project work. My family members owe an appreciation from me for their cooperation during the exercise. Especially me as the Head teacher Mr, Lenox Safari , the staff of KIU, Staff of Marafa primary school, my brothers for the ample time they gave me. I also thank members of my staff, other teachers from Marafa primary, Makumba Primary and other schools that helped me in data Collection and all that landed a hand in one way or another.

My supervisor, **MR.** Tusiime Twebaze Ramadhan, need to receive my special thanks for their commitment, guidance and moral support that they accorded me during this hectic undertaking of the report writing.

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ABSTRACT

The research was aimed at investigating and elaborating the effects of nutrition on growth and development of children of ages between infancy and 15 years of age in MARAFA Division Magarini District Kenya. The objectives of the study were; to find out factors that lead to malnutrition in the division, identify the correct nutritional requirements for children and to examine the effects of nutrition on growth and development of children. A sample of 13 head teachers, 50 parents and 10 pupils from each of the 13 schools was used.

The research was done within Marafa Division of Magarini District in Kenya where data collection was through interviews with stakeholders, questionnaires, observations, library and internet. Stratified random sampling procedures were used to select the sample. The researcher used frequency distribution tables in the analysis of the research findings.

It is evident from the research that there is a relationship between the nutrition of children and their growth and development. Positive learning outcomes of children depend on their nutrition.

It's therefore my opinion to recommend that all care givers, parents, guardians and the whole community be given enough information and ideas on what is required as far as nutrition of children is concerned and base direct actions in them and focus on counseling for behavior change. This goes a long way to improving and ensuring holistic development of children in all ages.

CHAPTER ONE

GENERAL INTRODUCTION

1.0 Introduction

This chapter shows the background, problem statement, purpose of the study, objectives, research questions, scope and significance of the study

1.1 Background of Study.

Nutritional Indicators in Children often serve as proxy indicators of their overall well being in developing countries because they reflect the burden of infectious diseases on the community, as well as access to food and caring practices. (KNICEF, 1998).

KNICEF (2000), States that the United Nations currently estimates that about 35 per cent of Children less than 5 years of age in Sub- Saharan Africa are stunted (ACC/SCN, 2000), although Country estimates range from around 20 percent in South Africa and Zimbabwe to over 50 percent in Mozambique, Tanzania and Ethiopia. Kenya ranges between 30-40 per cent.

Improving the Nutrition Situation in Africa has been a challenge for decades, complicated by a combination of individual, household, community, national and international factors, including in the last decade the emergency of HIV/AIDS. Diseases, cultural beliefs and customs, high fertility rates, poor economic status, and limited access to health and other social services also contribute to chronic endemic malnutrition in this region (Ndure et al, 1999).

Again KNICEF (2000), states that Vitamin A deficiency is widespread all over the continent, with countries reporting 20 and 70 percent of children suffering from Sub-clinical deficiency (Serum retinal L 0.7 mmo(1)). About 60 per cent of Children in Kenya under 5 Years suffer from anemia. These forms of malnutrition result in impaired immune system and inability to fight infection; and fatigue, apathy, and reduced cognitive and mental development.

According to the Director of Basic Education, ECDE Division (2005), the Kenya government recognizes the Importance of Early Childhood Development as one of the most important levers for accelerating the attainment of the Education For All (EFA) and Millennium Development Goals (MDGs). The new Early Children policy framework should ensure provision of holistic and integral programmes to meet Kenyan children's cognitive, social, moral, spiritual, emotional and physical needs. It provides for the integration of Four to Five year old children into Primary circle making Early Childhood Care and Education an integral part of basic Education, The policy framework calls for broad partnerships and networking with stakeholders to cater for provision of Early Childhood services for infants and young children below four years of age.

Several Studies have explored the relationship between nutritional anthropometrics indication and such School indicators as grade level, age at enrolment, absenteeism, achievement test scores, IQ, and performance on selected cognitive tasks including concentration in the classroom of the nine studies reviewed by polite (1990), all reported significant findings between the Nutritional Status Indicators and Cognitive Test Scores or School Performance Indicators.

In Africa, Iodine deficiency disorder afflicts 40 per cent of the population in Kenya, 70 per cent in the Sudan, and 75 per cent in Cameroon. Rates are also high in Asia Myanmar (Previously Burma), Nepal and Indonesia, for example all report prevalence rates around 70 per cent (Galloway, as cited in Israel and Hornsby). Prevalence is higher among females. To the degree that Iodine deficiency affects School environment and performance, gender differences in Educational attainment, already significant, Simon further exacerbated by this differentiated pattern of iodine deficiency incidence (Simon, et al).

Children in Marafa Division of Magarini District in Kenya are not an exception. There is exist of these nutritional disorders in most of the school- age Children. It is in this view that the researcher will find out factors leading to poor nutrition and relate their effects to growth and development of Children.

1.2 Statement of the Problem

Nutrition as one of the most important aspects of human health, contributes tremendously to the holistic development of a child. According to Murray and Lopez, (1996), they suggest that little or no progress has been made in reducing the prevalence of malnutrition among children in Sub-Saharan Africa in this century and in several countries, malnutrition is increasing as a result of armed conflicts, deteriorating health services, shrinking economies and HIV/AIDS. Much of the Africa's child disease burden is directly related to malnutrition.

This study intended to find out the causes of malnutrition in the Division, identify the correct nutritional Status for Children and examine the effects of nutrition on the growth and development of these children. Finally, Sensitize the Community on proper nutrition as it plays a vital role in the holistic development of Children right from conception.

1.3 Purpose of Study

The Purpose of this study was to examine the effects of nutrition on the growth and development of children in Marafa Division of Magarini District in Kenya using the case study design with a view of improving their total well being. In the study, nutrition was characterized by the provision of proper nutritional requirements for the holistic development of the same children.

1.4 Objectives of the Study

The Objectives of this Study were;

1. To find out factors that lead to malnutrition in children in Marafa Division of Magarini District in Kenya.
2. To identify the correct nutritional requirements for children.
3. To examine the effects of nutrition on growth and development of children.

1.5 Research Questions

1. What factors lead to malnutrition in Children?
2. What are the correct nutritional requirements for children?
3. How does nutrition affect the growth and development of children?

1.6 Significance of the Study

The findings of this study will make parents and other care- givers understand that proper Nutrition is necessary for proper growth and development of children at all stages of life. It will enable the residents of the Division to gain knowledge and bring about positive change in children rearing practices and Education. It will also help the government formulate policies on school feeding programs to ensure proper health and nutrition of children.

1.7 Delimitations and Limitations of the Study.

1.7.1 Delimitations:

The researcher understood the language of the catchments area where the research was undertaken.

Availability of a Resource Centre in the Zone enabled the researcher to access the required information easily.

The researcher investigated within a small area of the Division thus ensured the target population and sample was within reach.

1.7.2 Limitations:

The researcher experienced the following constraints during the study:

Lack of co-operation from some respondents. This was experienced especially during the oral presentation of the questionnaire.

Inaccessibility to some areas was a problem due to poor road infrastructure. Some roads were impassible due to bad weather, when there was much rainfall.

Limited time due to other activities affected the researcher. Many activities were undertaken along side the project within the same school programmes.

Inadequate finances to facilitate some activities. It was expensive to undertake the project especially on activities that demanded some financial implications.

1.8 Definition of Terms

Nutrition: The Ingestion of the right amount of food containing the right nutrients, which are absorbed and are utilized in the bodies.

Nutrients: Components of food stuffs which can be used by a living thing /organism for the purpose of life and growth.

Growth: The Quantitative changes that take place in. a living thing expressed in terms of size, height and weight.

Development: The Qualitative Changes that accompany growth which can not be measured in terms of Physical Units but may quantified in terms of arbitrary units which are observable such as changes in behavior.

A child: A boy or girl at any age between infancy and 18 years of age.

Health: Total well being of a person but not merely the absence of diseases.

Poverty: Is the condition of being poor, deficiency in or inadequate. supply of something

Ignorance: It is the state of not knowing or lack of education about something.

Effect: Is the result produced by a cause, influence or power to change.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction:

This Chapter reviews the related literature, theories, Laws and Concepts that relate on how nutrition affects the growth and development of Children.

2.1 The Main Review.

According to Magnus Pyke (1975), Our Knowledge of Nutrition as always in science, there is certainly more to know, children can not grow well unless they are given the right food to eat. But there is now evidence to show that children and young animals grow better if they are given attention and love as well as vitamins and proteins. Nutrition contributes to good health. In most countries nutrition rates are slowly improving but in Eastern Africa, Malnutrition rates and absolute numbers are increasing from 22 million Malnourished children under 5 Years and an Estimated 24 Million 2005.

2.1.1 Factors that lead to malnutrition

Jitendra M.D (1999), States that interest in the health aspects is no longer confined to “Health food types” and those on medically restricted diets. Today, an increasing number of health persons have made health related changes in their eating habits and food preferences.

Fat babies do not necessarily become fat adults. The fat- cell theory (that fat babies develop more fat cells thereby causing adult obesity) has been disapproved by Dr. Alexander F. Roche of the Fels Research Institute in Yellow springs, O.H. The major danger of fat babies is respiratory infections.

Malnutrition remains widespread in that annually, 30 Million infants are born with intra-uterine growth retardation due to poor nutritional status. Also one out of three under five years in the developing world are stunted. More than a billion people are at risk of iodine

deficiency and an estimated 35 billion people are affected by iron deficiency. More than 250 Million people are affected by sub-clinical vitamin A deficiency (Check 2000) Disease, cultural beliefs and customs, high fertility rates, poor economic status and limited access to health and other social services also contribute to chronic endemic malnutrition (Ndure, 1999).

According to FG Joseph (2002), factors that lead to Malnutrition include; Ignorance, Economic, lack of even food distribution, lack of adequate production, poor farming practices, lack of proper storage facilities, social customs, poverty, among others.

2.1.2 Nutritional requirements for children.

Good nutrition is essential for optimal health and functioning of all the body organs and eating a diet rich in fruits, vegetables, grains and essential oils help deliver the necessary vitamins to keep your skin supple and glowing. Nutrition guidelines recommended for adults are inappropriate for most children under the age of five. This is because young Children only have small tummies and so need plenty of calories and nutrients in a small amount of food to ensure they grow properly. Juliette, 1974).

According to Magnus pyke (1975), Infants of 0-3 Months are mostly breastfed. Protein intake of healthy Infants is found to be about 2 Mg per Kilogram of body weight. There are 53 nutrients in our bodies grouped into a number of categories that include: Proteins, Carbohydrates, Fats, Minerals, Vitamins and water. In a day's diet these nutrients must be present to ensure good health.

Pollit (1983), states that although reliable estimates on the number of children who come to school everyday feeling hungry do not exist, short term or temporary hunger is unquestionable pervasive condition in developing countries. In the school setting, temporal hunger commonly occurs when children come to school without eating breakfast. The result of this short- term hunger is that a child is more easily distracted by irrelevant stimuli.

World Food Programme (2005), says that a child suffering from hunger. going to School is not important; having enough food to eat is. Among the poor, there is often not enough

to eat at home, and most schools in developing countries do not have canteens or cafeterias. On empty stomachs, children become easily distracted and have problems concentrating on their lessons. The promise of at least one nutritious meal each day attracts regular attendance, and enhances student performance. In the poorest pockets of the world, these simple strategies can double enrolment in early childhood centers in one year.

WFP's school feeding programmes work towards achieving several Millennium Development Goals (MDGs). For instance, the programmes directly address the goals of reducing hunger by half and achieving Universal Primary Education by 2015, and of achieving gender parity in education by 2005. School feeding also contributes over the long term the reduction of diseases and poverty. It provides a platform for directly addressing child health and nutrition, environmental education, and HIV/ AIDS and Malaria Prevention.

Julliette Kellow (2009) says while low fats are recommended for older children and adults, under- fives need diets that contain good amounts of fat. This fat should come from foods that contain plenty of other nutrients like meat, oily fish and full- fat milk (Semi- skimmed milk unsuitable for under- fives), rather than from high- fat foods that contain few Vitamins and minerals like cakes, biscuits and Chocolate.

Meanwhile, as kids approach school age, they should gradually move towards a diet that is lower in fat and higher in fiber. And by the age of five, their diet should be low in fat, Sugar and Salt and high in Fiber with Five Fruit and Vegetable a day- just like Adults. However, young children shouldn't eat too many fiber- rich foods, either, as these may fill them up so much that they cannot eat enough to provide them with adequate calories and nutrients.

Fortunately, whatever their age, children can easily get a balanced diet and lower risk of becoming overweight or obese- by eating a variety of foods from four main food groups; Bread, other Cereals and Potatoes, Fruit and Vegetables, Milk and Dairy foods and from each of the four main groups will help to ensure that kids receive all the vitamins and minerals they need for good Nutrition and Health.

It is particularly important that children and teenagers eat a diet that is packed with vitamins and minerals. In fact older Children often have higher requirements for nutrients than even adults in order to support growth- for example , 15 to 18 years old boys need more thiamin(Vitamin Bi) , niacin (Vitamin B3), vitamin B6, Calcium, Phosphorus and Iron than adult men. Similarly 15 to 18 years old girls need more Niacin, Calcium, Phosphorus and Magnesium than adult women.

It is also important to ensure that children don't have too much salt. While adults should have not more than 6g of salt a day, Children need even less as they have smaller bodies. So don't add salt to cooking or meals and check Information on labels when you buy processed food such as crisps, ready meals and sauces- even if they're aimed at children.

2.1.3 Effects of nutrition on growth and development of children

Magnus Pyke (1975), States that a Child's Brain grows very quickly during the first months of its life after birth and by the time it's 18 months old, it's approximately 80% as big as it is ever going to be. When there is acute shortage of proteins in the early months after weaning, the brain like the rest of the body cannot give properly, so that the child grows up mentally defective and remains so for the rest of the life.

Mental Institution of Nutrition (1981), indicates that the children from well fed and well to do sections of the community are taller and heavier than children from a malnourished background and their resistance against diseases is better.

Wilson (1983), addresses the issue of hunger and its impact on schoolwork, in his view of the literature on interrelationships among diet, physical growth, verbal development and School performance. He noted that the effects of current diet on School performance are now well documented. Most studies find that even iris relatively well- nourished populations in the US; temporarily hunger as opposed to malnutrition adversely affects attention, interest and learning. Such findings are consistent with Lathan and Cabos hypothesis, as cited by Wilson, that low energy leading to inactivity has short- term effects on learning that can be cumulative regardless of long term nutritional status.

The gains from malnutrition reduction are substantial. For example, School environment ratios increase with a relatively small improvement in height for age. Addressing Vitamin A deficiency can reduce mortality among Children by nearly 23%. Universal salt iodization can eliminate the several mental retardation associated with iodine deficiency and can add as eleven IQ points which will help prevent cognitive changes that reduce school performance.(malnutrition global burden of disease, 2000).

In June and July 2002, the group of Eight Industrialized Nations (G8) and the New partnership for Africa's Development (NEPAD) recognized the importance of School feeding by listing it as a specific intervention in their action plans. The results from this intervention were seen. For instance, in 1999, 11.9 Million Children in 52 Countries were beneficiaries of WFP School feeding activities. In 2000, WFP feeding programmes reached 12.3 Million School Children in 54 Countries. In 2001, there were over 15 Million beneficiaries in 57 Countries. In 2002, WFP reached 15.6 Million School Children in 64 Countries. In 2003, beneficiary members. increased in most of the 69 Countries receiving WFP School feeding assistance.

Begum (2005), states that nutrition affects the body size, brain development, the capacity to do work and Performance and the life span. The condition largely depends upon the feeding habits of the Community, which are influenced by social customs, beliefs, religion, cultural behavior, changes in the environment, intercommunication and socio cultural factors play a vital role in the ecology of malnutrition along with the nutritional and Medical factors.

According to UNICEF (2000), forms of Malnutrition result in impaired immune system and inability to fight infection, increased infant and young child mortality, fatigue, apathy and reduced cognitive and mental development. According to Beegum (2000), He states that the general malnutrition and specific micronutrient deficiency contribute to infant and maternal morbidity, decreased learning capacity and lower productivity; many deaths are associated with low weight. Anemia causes 6% of maternal deaths. Most Children are stunted due to malnutrition.

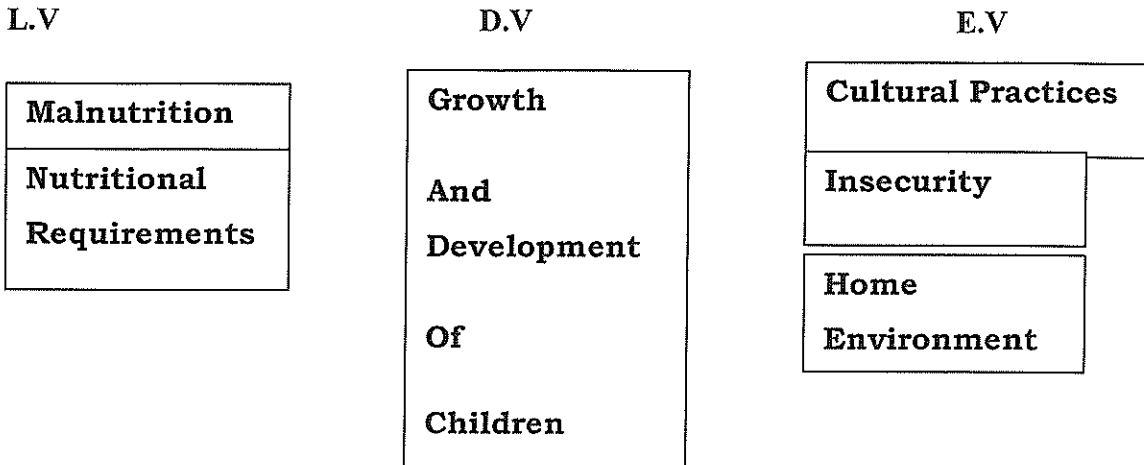
Berlin Catherine (2005), states that Children who have suffered from iodine deficiency in the uterus, were born with low birth weight, had inadequate infant feeding practices, had poor growth during infancy and early childhood, and that they have iron deficiency and are anemic; all do worse in class. She adds that the provision of food and nutrition intervention in School has many positive effects on School attendance and performance. Children that have eaten breakfast are better able to concentrate on their lessons, be it in a developing country setting. The provision of meals and micro- nutrient supplements together with periodic deworming contributes to reducing anemic and improving School performance and reduces drop outs, especially among girls.

2.2 Conclusion

Malnutrition remains wide spread in the world due to poor nutritional status, but good nutrition is essential for optimal health and functioning of all the body organs. Low energy leading to inactivity has short- term effects on learning that can be cumulative regardless of long term nutritional status. The gains from malnutrition reduction are substantial.

23 Conceptual frame work

Figure 2.3.1



Source: Researcher made (2009)

From the figure above, the three independent variables; malnutrition, nutritional requirements and effects of nutrition all affect the growth and development of children either positively or negatively. Among these, other factors that affect growth and development indirectly include:

Cultural p ractices, such as taboos; insecurity and home environment. When there is insecurity and poor home environment, care givers lack time to produce what to eat and even if there is, they may not have time to eat thus affecting their nutrition which in turn affects their size as well as cognitive capabilities.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

This Chapter presents a detailed description of the selected research design. It is going to describe in detail what was done and how it was done.

3.1 Research Design

The study employed a case study design where the researcher used the case without replacement; this helped to gather data in its existing form to find out the relationship between the two Variables, which were not manipulated; nutrition and growth and development of Children.

3.2 Environment/ Area of Study

The research was done in Marafa Division of Magarini District in Kenya, and Eastern Valley Province of Kenya. The Division is in the northern part of the district covering three locations, with 13 full Primary Schools and more than 45 ECD Centers. A large number of the Population is poor and thus many children are malnourished.

3.3 Target Population

The study focused on children from infancy to about 15 years of age, Parents, School Administrators and other Education Stakeholders in Marafa Division of Magarini District in Kenya. The area is considered to provide a focal point for the study of nutrition since many people are poor thus the growth and development of children is affected.

Homogeneous according to the shared characteristics. The respondents were then randomly selected from each group so that each category was fairly represented. A sample of 13 Head teachers, 50 parents and 10 pupils from each of the 13 schools was used.

3.5 Data Collection tools.

The data was collected using questionnaires and interview schedules. The Questionnaires had both closed and open- ended questions. They were personally administered to ensure quick response and clarity of the questions that were not understood. These were also post tested to ensure reliability and validity. Interview schedules as well as observation check-lists were used. This enabled the researcher to balance between the quantity and quality of data collected.

3.6 Data Presentation and Analysis

The data was edited and coded for the Purpose of ensuring accuracy and completeness of Questionnaires, Interview Schedules and Observation checklists. The data obtained was analyzed using the descriptive statistics and use of tables.

3.7 Ethical Considerations

The major ethical problem in this study was the privacy and confidentiality of the respondents. Obtaining a valid sample entailed gaining access to specific lists and files within the confidentiality of the respondents. However, the respondents had the freedom to ignore items that they did not wish to respond to.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION.

4.0 Introduction

This chapter presents the main findings of the study, analysis and interpretation of the same.

4.1 Factors that have led to malnutrition among children

Table 1: presents the respondents opinion about factors that have led to malnutrition among children.

FACTORS	FREQUENCY	PERCENTAGES
Poverty	20	100%
Ignorance	18	90%
Social customs	15	75%
Poor farming methods	12	60%
Inadequate production	12	60%
Lack of proper storage	10	50%
Lack of time	6	30%

Source: (Field Data 2009)

From the frequency table 4.1 above, 100% of the respondents cited poverty as a major factor that leads to malnutrition, 90% of them associated malnutrition with ignorance. This means that most parents do not have an idea of the importance of good nutrition for their children. 75% of the respondents associated it with social customs indicating that certain customs and taboos that hinder the children from eating certain foods. Poor farming methods and inadequate production were factors that 60% of the respondents mentioned to have contributed to poor nutrition. This is because most people have small pieces of land where by they grow their crops.

Lack of proper storage was also a factor that half of the respondents cited to have contributed to malnutrition in the area. This is because most of them do not have facilities

that can store the crops harvested for along time. Lack of time affects many rural mothers who have many domestic chores that make them not prepare food required for their children.

4.2.1 Availability of feeding programs and poor nutrition

Table 2: presents the availability of school feeding programs (SFP)

Feeding program	Frequency	Percentage
No feeding program	10	50%
Have in some classes	6	30%
Have in all classes	4	20%
TOTAL	20	100%

Source: (Field data, 2009)

According to table 4.2.1, 50% of the schools in the division do not have school feeding programs. This is because most of the parents that are to provide the snacks are poor and ignorant of the importance of the programs, 30% of the schools have the feeding programs only in some classes, and that is the ECD centers and standard eight. This is because in the ECD centers snacks are a necessity. All these schools have children taking porridge as the main snack at break time. Only the boarding schools have the feeding programs in all their classes.

4.2.2 Type of food served in schools.

Table 3: Types of snack served,

TYPE OF SNACK	FREQUENCY	PERCENTAGE
Porridge	33	82%
Tea and bread	3	8%
Beans and maize	4	10%
TOTAL	40	100%

Source (Field data, 2009)

The table above indicates that out of the 40 schools visited that have the feeding program, porridge is the main snack that is served and that mostly the porridge had no sugar. Few schools provided tea with bread as this was seen as expensive. Only four schools give a meal of maize and beans this is also seen as expensive. It's therefore evident that most of the children do not receive proper nutrition at school.

4.3,1 Distribution by parents' attitude

Table 4: Parents' attitude

PARENTS	FREQUENCY	PERCENTAGE
Positive	10	25%
Negative	30	75 ⁰⁰
	40	100% -

Source (Field data, 2009)

The results in table 4.3.1 show that most of the parents have a negative attitude towards the feeding programmes in the schools and that is why few schools have the programme and also not all the children are in the feeding program.

4.3.2 Ability of families to provide a balanced diet

Table 5: Presents respondents balanced diet.

NO OF HOMES GIVING BALANCED I DIET	FREQUENCY	PERCENTAGE
Give always	4	8%
Give sometimes	12	24%
Hardly give	34	68%
TOTAL	50	100%

Source; (Field data, 2009)

The table above shows that majority, that is 68% of the homes do not give a balanced diet to their children, the main reasons being poverty and ignorance. 24% of the homes visited admit to give the balanced diet to their children only sometimes, These are mainly

families with employed parents, especially at the end of the month when they earn their salaries. Only 8% of the homes visited do give a balanced diet to their children always, as they understand the importance of giving good nutrition to their children.

4.4 Nutritional requirements for children.

Table 6: Nutritional requirements for children.

NUTRITIONAL NEEDS	FREQUENCY	PERCENTAGE
carbohydrates	15	75%
proteins	18	90% 90% 90%
Fats	10	50%
Minerals	12	60%
Vitamins	17	85%
Water	20	100%

Source ;(Field data, 2009)

From the 20 respondents who were interviewed, all of them understood the need and importance of water in the growth and development of children. 90% of them understood that proteins are necessary as well as vitamins, minerals and fats. Generally most parents are aware of the importance of the nutritional requirements of the children but they do not give it to them because they do not afford most of the requirements, thus their children are usually malnourished

4.5 Effects of taboos on nutrition of children.

Table 7: Food taboos that affect children's nutrition.

FOOD TABOO	FREQUENCY	PERCENTAGE
Eggs	15	75%
Chicken	10	50%
Beef	8	40%

Source ;(Field data, 2009)

The table above indicates that some peoples still hold onto some taboos that there are certain types of food that the children are not supposed to eat. For instance 75% of the respondents strongly believe that children are not supposed to eat egg as their speech may be delayed. 50% still believe that if the children eat chicken, then they would have very serious wounds on their backs, while for meat they said, it would make the children to become greedy. The taboos affect the children's nutrition as they are denied certain important requirements.

4.6 Cases of malnourished children.

Table 8: Malnourished children in schools.

NO. MALNOURISHED	FRQUENCY	PERCENTAGE
20-30	30	66%
10-20	10	22%
0-10	5	12%
TOTAL	45	100%

Source ;(Field data, 2009)

The tables above shows that 66% of the ECD centers in the division had between 20-30 of the their children suffering from malnutrition.22% of the schools investigated had between 10-20 of the children suffering from malnutrition and only 12% of the schools had less than 10 malnourished children. This indicates that actually a good number of children in Marafa Division of Magarini District in Kenya suffer from malnutrition and hence the need to address the problem of malnutrition in the area as this adversely affects the growth and development of the children.

4.7 Qualitative analysis

The questionnaire had questions to be analyzed qualitatively. The respondents offered the following views, which were represented qualitatively. It was established that very few schools in the division had the feeding programs. Also for the schools that had it not all the children are in the program. This is because, it was established that for those with feeding programmes, the food prepared and the snacks were from the contributions of the

parents. Since most of the parents are poor and also have a negative attitude towards having feeding programs in schools, it was also very difficult for the teachers to succeed in the implementation of the program at the schools and thus most of the children had their development affected. The study findings also indicated that for the children who were in the feeding program, most of them liked the food and they were also found to perform better in their cognitive and psychomotor development.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the summary of the finding in section 5. 1, conclusion in section 5.2 and recommendations in section 5.3

5.1 Summary of findings

Factor that have led to malnutrition among children.

The study findings show that there are many factors that have contributed to poor nutrition of children in the division. Among them are but not limited to, poverty, ignorance, social customs and taboos, poor farming methods, lack of proper storage and lack of time.

Availability of school feeding programmes

From the study, it indicated that most schools in the division do not have feeding programs. It was established that for those schools with the feeding programs, the food prepared and the snacks were from the contribution of parents. Since most parents are poor, it is difficult for teachers to succeed in the implementation of the program and so most of the children have their development affected.

Types of food served in schools.

It was found out that all the schools that have a feeding programme in place do prepare porridge as the main snack. Other types of foods like maize and beans, tea and bread, is seen as expensive. This is simply because most people in the division are poor.

Parent's attitude towards school feeding program

Most parents have a negative attitude towards school feeding programs. This is due to their ignorance on the importance of nutrition.

Ability of families to provide a balanced diet.

The findings showed that most homes are not able to give a balanced diet due to poverty and ignorance. Only few homes provide sometimes, especially those families with employed parents, especially when they earn salaries at the end of the month.

Nutritional requirements for children.

Most parents and care givers are aware of the nutritional requirements for children but they can't provide because they do not afford to do so, thus children are usually malnourished.

Effects of taboos on nutrition of children.

The study findings showed that most of the people still hold onto certain taboos that deny children some food; for example eggs, chicken and beef. These taboos affect children's nutrition which in turn affects their growth and development.

Cases of malnourished children

The findings show that a good number of children in Marafa Division of Magarini District in Kenya suffer from malnutrition, In every school within the division one can not miss to find a child who is malnourished.

5.2 Conclusion

The main effects of nutrition on children is that with poor nutrition and lack of feeding programs, children may not be able to develop holistically. Years of malnutrition have a cumulative effect that needs to be reversed, and a combination of nutritional and psychosocial interventions can have a greater effect on cognitive development and physical growth than either intervention alone. Although it is likely that children are most vulnerable to the effects of nutritional deficits in the first few years and that some of these effects may be irreversible, much can still be done

improve the learning potential of malnourished schoolchildren. School feeding—particularly breakfasts or morning snacks — can help hungry children stay attentive, but the high cost of such programs demands a high degree of targeting and additional research to improve their impact on under nutrition.

5.3 Recommendations

From the research findings, the study recommends the following areas to be addressed; There is need for the government to provide the school feeding programs in all schools to ensure that the nutrition of children is improved if the children need to achieve higher in their performance. The parents need to be educated on the importance of the feeding programs in schools so that they change their attitude towards it and start contributing to it, The government should encourage the improved farming methods so as to ensure that there is enough food that can help in the reduction of the malnutrition cases.

Fortification and supplementation be combined such as iodized salt iron/folic acid and vitamins supplements to ensure that any given meal at least children get a balanced diet. The health workers should organize forums that can be used in the education of the parents on nutrition. This will help to remove ignorance among parents over the nutritional requirements of children.

REFERENCES / BIBLIOGRAPHY

Beegum Reheena, (2005), Speaking of childcare and Nutrition. New Dawn Press, New Delhi.

Ingule Frank, (1996) Introduction to Educational Psychology. E.A.E.P, NAIROBI.
Internet.

Jitendra MD, (1996), Catering management .Dorminant Publishers, Delhi.

Magnus Pyke, (1975), Success in Nutrition. The Chaucer press Ltd,, Bungay, Suffolk
NACECE, K.I.E, (2002), Some common Childhood diseases and health records. KLB, Nairobi

NACECE, K.I.E, (2002), How Children grow and develop. K.L.B, Nairobi.
Stolzfus R.J and Dreyfus M, (1998), Guidelines for the use of iron Supplements to prevent and Treat Iron deficiency. INAG, Geneva.

WHO, (1997), Management of the Child With a Serious Infection Severe Malnutrition
UNICEF, Hong Kong.

Ministry of Education (2003), *Elimu News, Education Sector Programme*, KENESCO-
Nairobi Office, MOE.

Ministry of Education (2007), *Gender Policy in Education, Education Sector Programme*
UNESCO- Nairobi Office; MOE

Ministry of Education, Science and Technology (2001) *Core Module, Kenya Institution of Education*; MOEST

Freda Rebelsky and Lynn Dorman, copy right (1974). *Child Development and Behavior*.
Second Edition. USA.

APPENDICES

APPENDIX 1:BUDGET

No.	Item	Description	Est. Amnt. (Kshs)
1.	Stationery	-2 Reams of Photocopy paper @ 400/- - 2Pkts of Diskettes @ 500/- - Writing Materials @ 500/-	800 1000 500
2.	Personnel	2 Field assistants @200/- Per day 30 Days	12000
3.	Travel and Accommodation	- Fare to move within the Zone. @ 200 for 30 Days	6000
4	Services	- Secretarial, Photocopying, - Printing, Binding	5000
5.	Miscellaneous	1% of the cost	253
	Total Amount =		25,553

APPENDIX 11 TIME FRAMEWORK

Phase! Activity	Time (Months)	Dates
Development of Proposal	3	May- July
Development and Piloting of Instruments	1	August — 2010
Data Collection	1	September-2010
Data Organization, analysis and Interpretation	1	Oct. 2010
Typing/ Editing/ report writing/ Submission	- 2	Nov-Dec 2010

APPENDIX III
INTERVIEW SCHEDULE WITH STAKEHOLDERS

1. What factors lead to malnutrition in Children?
2. Do your children receive a balanced diet in all meals?
3. What kind of nutrients do children require for their normal growth and development?
4. Are there certain foods children are not allowed to eat? Why?
5. Does nutrition affect the growth d development of Children

APPENDIX IV
INTRODUCTION LETTER

MARAFA PRIMARY SCHOOL
P.O.BOX .23412 MAGARINI
12th/AUG/ 2010

TO:
ALL RESPONDENTS
TUSHIME TWEBAZE RAMADHAN

Dear Sir/Madam,

RE: **RESEARCH PAPER.**

This is a research paper to investigate the effects of nutrition on growth and development of children in Marafa Division of Magarini District in Kenya

The results of the research work are geared towards sensitizing the society on the importance of nutrition as well as to assist other researchers to carry out further detailed research on the same topic.

Please fill the questionnaire by either ticking or as instructed by the questionnaire itself.

All the information given will be confidential. Please give accurate information.

Thanking you for your Co— operation

Yours faithfully:

.....
TUSHIME TWEBAZE RAMADHAN

APPENDIX V: QUESTIONNAIRE

1. What is your school enrollment?

1- 200 pupils ☐ 200 300pupils ☐
301 — 500 pupils ☐ over 500 ☐

2. Does your school have a feeding programe?

Yes ☐ No ☐

a) If yes, which classes participate?

.....

b) If no, please explain why?

.....

3. What type of food do the children take during their snack time? Please tick which ever applicable.

Porridge ☐

Tea / Escort ☐

Beans/ maize ☐

4. Are there cases of malnourished children in your school?

Yes ☐ No ☐

a) If Yes, how many?

b) If No, please briefly explain

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