

**NUTRITION AND ACADEMIC PERFORMANCE OF LEARNERS IN
SELECTED EARLY CHILDHOOD CENTRES IN KIHARU
DIVISION MURANGA DISTRICT KENYA**

BY

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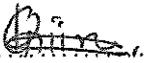
A research Report Presented to the Institute of open and distance learning in partial
fulfillment of the requirement for The award of
Bachelor of Early Childhood and
Primary Education Kampala
International university

APRIL 2009

Declaration

I, declare that this project is my original work and has never been presented to any other university for award of any academic certificate or anything similar to such. I solemnly bear and stand to correct any inconsistency.

Signature

.....

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DATE 15TH APRIL 2009

Approval

This report is resulting from the researcher's effort in the area to investigate the effects of Nutrition on Academic Performance of Learners in Selected Early Childhood Centers in Kiharu Division Murang'a District Kenya was conducted under my supervision with my approval; it is now ready for submission to the academic board for the award of a bachelor degree in early childhood and primary education of Kampala International University

Signed

~~Nabuseeta~~

.....
SUPERVISOR TALIGOOOLA DEBORAH NABUSETA

58
/ 100

DATE... 15/04/2009

Dedication

This work is affectionately dedicated to my husband Mr. John K. Kamau , to my late parents Mr. and Mrs. Dishon Nyamu, to my children Kennedy, Carol and Joslyn, for their support patience and understanding during this period of study.

Acknowledgment

First of all I give thanks to the almighty God for his mercy and grace granted to me during this time of my degree course and through this research project

I would like to thank my supervisor Mrs. Taligoola Deborah Nabuseeta for being there for me whenever I needed her and also offering her professional advice where necessary.

I would like also to thank my head teacher and the rest of the staff for their support and prayers towards the success of my course.

Am also grateful to the full faculty of Kampala International University IODL, Lecturers and all the staff members for mounting all the directives, procedures and methods of carrying out this research project

I would also like to thank the respondents who returned the questionnaires and those who were cooperative to me.

May God bless you all.

Definition of terms

For the purpose of the study the following terms will be defined.

Academic performance: How children do in school either good or bad. This includes coping with the environment of the school and interactions with other children.

Development: children gradually growing and becoming strong.

Growth: the development of children

Nutrition: the process in which primary pupils receive food necessary for them to grow healthy.

Malnutrition: a poor condition of health caused by a lack of food or the right food.

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Abstract

The major purpose of the study was to determine Nutrition and Academic Performance of Learners in Selected Early Childhood Centres in Kiharu Division Murang'a District Kenya. The specific objectives of the study were to investigate the impact of nutrition on academic performance of early childhood, to determine the impact of Nutrition on the healthy development of children and to determine the Impact of nutrition on enrolment and attendance of children in schools in Selected Early Childhood Centres in Kiharu Division Murang'a District Kenya

The methods used for data collection were questionnaires to the teacher and interviews with the parents

The study revealed that Poor nutrition affects the academic performance of early childhood, Poor nutrition leads to lack of concentration in class, Poor nutrition leads to lack of morale in studies, Good nutrition is essential for good educational outcomes and Proper nutrition, health care, and stimulation during the early years improve learning and other abilities

The study revealed that Nutrition is essential for growth and development, health, and well-being, Poor nutrition during the first 3 years often permanently hampers a child's mental development, Poor nutrition leads to other diseases and Poor nutrition leads to obesity

The study revealed that poor nutrition leads to truancy. In this case, children do not attend school or miss classes because they are hungry. Children also miss school due to sickness caused by poor nutrition. Children do not attend school on regular basis

The study also established that poor nutrition leads to low enrolment. In this case few children join early childhood education centers.

The study established that because of poor nutrition, children drop out of school. In this case children will decide to leave school because he is always hungry at school.

From the ongoing discussion, the following are the recommendations that were made to help Nutrition and academic performance of pupils.

Nutritional and feeding programs should be introduced in schools and government should monitor and supervise the exercise.

The parents and the community should be sensitized on the importance of nutrition on early childhood and also taught how to feed their children what is right and important.

Nutrition education is important and therefore should be emphasized in schools and taken seriously.

CHAPTER ONE

INTRODUCTION

1.1. Background of the study

Children in developing countries must negotiate threats from a number of diseases before they reach school age. UNICEF (1999) More than 50% of child deaths are caused by pneumonia, malaria, measles, malnutrition and human immunodeficiency virus (HIV). For those who survive, health and nutrition can have an impact on their subsequent education, most significantly by affecting their chances of enrolling in school. In many resource-poor countries, physical and mental disabilities can effectively prevent children from attending school. UNICEF (1999.)

These result most commonly from iodine or folate deficiency or rubella infections *in utero* or from cerebral malaria, polio or meningitis infections postnatal. Less debilitating conditions can influence the likelihood and timing of enrolment. These include under-nutrition, less severe malaria infection and HIV-related orphan hood. The majority of all these conditions are treatable or preventable. (John Hoddinott et al., 2008) Tackling these health and nutrition problems through programmes during infancy and early childhood has the potential to make a major contribution to ensuring all the world's children have access to basic education.

Under nutrition limits national intellectual potential. It has major effects during the period from conception through the second birthday. Irreversible damage to the physical, mental, and social development of the child occurs during this period. (Simeon,D.T.,and S.M.Grantham-McGregor.1990) Early health, nutrition, and psychosocial stimulation can prevent malnutrition and its impact on learning. This powerful synergy between psychosocial stimulation and nutrition suggests that integrated attention to the young child is critical and that early childhood is the most cost-effective period for investment in education. (Reynaldo Martorell 2008) Later interventions with schoolchildren are useful remedial measures where children have suffered early insults and continue to suffer from malnutrition. It is upon this background that the study was undertaken.

1.2 Statement of the problem.

Early childhood nutrition is thought to have important effect on education, broadly defined to include various forms of learning. Schools have feeding programs but do not feed children a well balanced that can improve their lives or avoid getting diseases. Most people do not understand the difference between feeding and nutrition and hence need for the study.

1.4 Objectives of the study

The general objective of the study is to asses the effects of Nutrition on Academic Performance of Learners in Selected *Early Childhood Centres* in Kiharu Division Murang'a District Kenya

Specific objectives

Specifically this study seeks to;

1. Investigate the impact of nutrition on academic performance of early childhood in Selected Early Childhood Centres in Kiharu Division Murang'a District Kenya
2. Determine the impact of Nutrition on the physical development of children in Selected Early Childhood Centres in Kiharu Division Murang'a District Kenya
3. Determine the Impact of nutrition on enrolment and attendance of children in schools in Selected Early Childhood Centres in Kiharu Division Murang'a District Kenya

1.5 Research questions

1. What is the impact of nutrition on academic performance of early childhood in Selected Early Childhood Centres in Kiharu Division Murang'a District Kenya?
2. What is the impact of Nutrition on the physical development of children in Selected Early Childhood Centres in Kiharu Division Murang'a District Kenya?
3. What is the Impact of nutrition on enrolment and attendance of children in schools in Selected Early Childhood Centres in Kiharu Division Murang'a District Kenya?

1.6 Scope of the study

The study was conducted in Selected *Early Childhood Centers* in Kiharu Division Murang'a District Kenya. Muranga (also spelled as Murang'a) is one of the districts of Kenya's Central

Province. Its capital town is also now named Murang'a but was previously called Fort Hall (in colonial times before 1963). It is inhabited mainly by and is considered the home of the Kikuyu, the largest tribe in Kenya. The district has a population of 348,304 (1999 census). The study was to investigate the impact of nutrition on academic performance of early childhood education. The researcher specifically investigated the impact of nutrition on academic performance of early childhood, impact of Nutrition on the healthy development of children and Impact of nutrition on enrolment and attendance of children. The study was carried between January 2009 and April 2009.

1.7 Significance of the study

The study will call upon policy makers to make policies concerning nutritional matters in school.

The government will be called upon to make sure that schools provide meals for pupils in schools to avoid temporary hunger.

Teachers and headteachers will be called upon not to ignore the importance of nutrition in schools including feeding children and teaching them to eat healthy.

The parents will benefit from the study since they are the contributors to a child's happiness they will be able to help their children grow up well and learn how to feed them essential meals and foods.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction.

This chapter discusses the literature related to the study. For the purpose of the study the concepts below are discussed;

Nutrition and academic performance of early childhood

Good health and nutrition are needed to achieve one's full educational potential because nutrition affects intellectual development and learning ability Pollitt, et al (1993). Many studies report significant links between nutritional status and cognitive test scores or school performance. Children with more adequate diets score higher on tests of factual knowledge than those with less adequate nutrition. For instance, studies in Honduras, Kenya and the Philippines show that the academic performance and mental ability of pupils with good nutritional status are significantly higher than those of pupils with poor nutritional status, independent of family income, school quality and teacher ability.

Nutrition affects school performance indirectly as well. Undernourished children (low height-for-age) tend to be enrolled later in school than better-nourished children. This could be because parents deem shorter children to be younger, because they do not believe the children are physically large enough to attend school, or perhaps because they are investing more in the better-nourished children. In any case, late enrollment compounds the problems of intellectual impairment caused by nutritional deficits. (Alderman et al 1997)

Nutrition and health problems impinge on the quality of the biochemical organism and impinge the acquisition of skills and abilities needed to progress satisfactorily in the primary education.

Recent studies from the nutrition and economics literatures reaffirm the importance of nutrition for the cognitive achievement and school enrollment of children. Nutrition is also important for development of a country because whether the children are healthy they will study well and therefore are future leaders. (Berkeley Seth and dean Johnson 1991)

Nutrition and the physical development of children

Nutrition is essential for growth and development, health, and well-being. Proper nutrition, health care, and stimulation during the early years improve learning and other abilities. Nutritional Programs facilitate the development of a child in all its dimensions and have considerable long-lasting effects on the child's life. (Levinger beryl 2000)

Poor nutrition during the first 3 years often permanently hampers a child's mental development. Cravioto, J. and Patricia Cravioto. (1990) some children start out growing well but over time begin to fall off, both in weight gain and then in height. If the condition progresses, FTT children may become apathetic and irritable and may not reach milestones, such as sitting up or walking at the usual age. It is possible that FTT children don't process needed nutrients as efficiently as non-FTT children and that this results in central nervous system defects, such as hyperactivity and disorders of attention and learning. (Grantham-McGregor 1991)

Malnutrition is the lack of sufficient nutrients to maintain healthy bodily functions and is typically associated with extreme poverty in economically developing countries. It is a common cause of reduced intelligence in parts of the world affected by famine. (UNESCO 2000) Malnutrition as the result of inappropriate dieting, overeating or the absence of a "balanced diet" is often observed in economically developed countries (eg. as indicated by increasing levels of obesity).

Most commonly, malnourished people either do not have enough calories in their diet, or are eating a diet that lacks protein, vitamins, or trace minerals Latham m.et al 1991. Medical problems arising from malnutrition are commonly referred to as deficiency diseases. Scurvy is a well-known and now rare form of malnutrition, in which the victim is deficient in vitamin C. Berkely seth and dean Johnson (1991)

Malnutrition and infection are widespread in almost all developing countries. Among the most common conditions are protein-energy malnutrition (PEM), micronutrient deficiency disorders, helminthic (worm) infection, and upper respiratory illness. These conditions often combine to create negative synergies; thus, for example, PEM and infection frequently co-exist and multiply

the ill effects that each would cause the organism if present alone. (Grantham-McGregor, S., C. A. Powell, S.P. Walker and J.H. Himes 1991)

Chronic food deficits affect about 792 million people in the world (FAO 2000), including 20% of the population in developing countries. Worldwide, malnutrition affects one in three people and each of its major forms dwarfs most other diseases globally (WHO, 2000). Malnutrition affects all age groups, but it is especially common among the poor and those with inadequate access to health education and to clean water and good sanitation. More than 70% of children with protein-energy malnutrition live in Asia, 26% live in Africa, and 4% in Latin America and the Caribbean (WHO 2000).

The endemic nature of malnutrition and infection is probably also at the root of additional health problems that impede learning among school-aged children. Poor vision and auditory impairment, for example, are conditions that directly relate to infection and micronutrient deficiencies. (UNESCO 2000)

Impact of nutrition on enrolment and attendance of children in schools

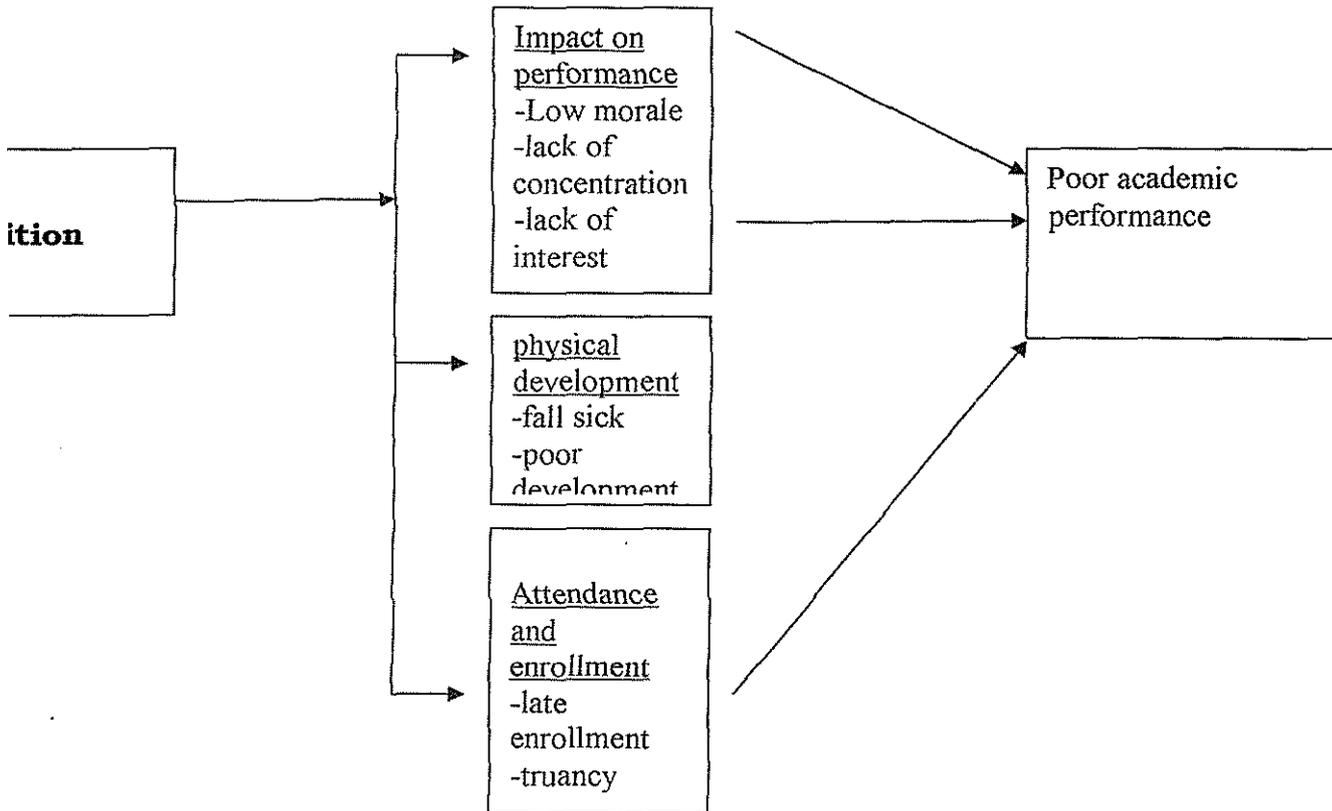
Children in poor health start school later in life or not at all. A study in Nepal found that the probability of attending school was 5% for stunted children versus 27% for children of normal nutritional status (Moock and Leslie, 1986). In Ghana malnourished children entered school at a later age and completed fewer years of school than better nourished children (Glewwe and Jacoby, 1994). The number of days that a child attends school is related to cognition and performance (Ceci, 1995; Jacoby, Cueto and Pollitt, n.d.). SFPs can have a positive effect on rates of enrollment and attendance.

Good nutrition is a key factor contributing to learner attendance and performance at school. This realization lends credence to Maslow's (1970) theory of human motivation based on a hierarchy of needs. The needs at the lowest level of the hierarchy are physiological, including hunger and thirst, and must be satisfied before a person can cope with safety needs (the need for protection and security). The next three levels of Maslow's hierarchy relate to higher order needs for love, affection, belonging and esteem. At the top of the hierarchy is the need for self-actualization, for

becoming what one has the potential to become. Thus nutrition, which meets primary human needs, is a foundation for ensuring development and learning. Lack of nutrition may be the single most important factor hampering effective learning in schools in South Africa.

Conceptual framework

Impact of nutrition on academic performance of early childhood



According to the diagram poor nutrition leads to low morale, lack of concentration and lack of interest in studies. This is so because they fall sick and therefore miss school sometimes and sometimes truancy which leads to poor academic performance.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0. Introduction

This chapter discusses the methods the researcher used to collect data. It focused on the Research design, organization of the study, data collection, and data collection procedure and data analysis.

3.1 Design

This study used a descriptive cross sectional survey. The research drew from both the qualitative and quantitative analysis approaches in order to get a bigger picture both in number and data.

3.2. Study area

This study was conducted in Selected Early Childhood Centers in Kiharu Division Murang'a District Kenya. The place is convenient in terms of transport and accessing the respondents.

3.3. Respondents

This study obtained information from teachers and parents.

3.4. Sample size and sampling procedure

Eighty teachers were expected to participate in the study and they were selected using random sampling while 15 parents were selected to participate in the study and selected using purposive sampling.

3.5. Instruments of data collection

Questionnaires were used to extract information from teacher's and interviews for parents. Open ended questionnaires were suitable for investigating deeper the subject matter. Observation were also done on the status of the children.

3.5.1 Reliability of the instruments

Since the teachers were many questionnaires were convenient because they gathered a lot of information in a short period of time, interviews were suitable because they give you first hand

information from the respondent and Observation helped the researcher get a clear picture on the nutritional status of children.

3.6. Data collection procedure

A letter of introduction from the institute of continuing education was sent to facilitate in the data collection exercise. The letter was handed to the head teacher before Questionnaires were distributed to teachers and focus group discussions held with the pupils. The data collected was sorted and categorized after which it was analyzed. The conclusions and recommendations were be made.

3.7. Statistical treatment of data

The frequencies and percentages were used to determine the number of sample respondents used in the research process and the number that participated positively in contribution to the research.

Formula;

$$\text{Percentage (\%)} = \frac{F}{\text{Total number of respondents}} \times 100$$

Where F = number of respondents

Observed

Qualitative analysis; Data from questionnaires was standardized hence requiring categorization. Such data was presented in a descriptive form above which was used to discuss the results of quantitative data.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.0 Introduction

This chapter is a presentation, discussion of the findings. The results are presented in form of tables, frequency counts and percentages. This chapter focuses on “study is to determine Nutrition and Academic Performance of Learners in Selected Early Childhood Centres in Kiharu Division Murang’a District Kenya. The specific objectives of the study were to investigate the impact of nutrition on academic performance of early childhood, to determine the impact of Nutrition on the healthy development of children and to determine the Impact of nutrition on enrolment and attendance of children in schools in Selected Early Childhood Centres in Kiharu Division Murang’a District Kenya

4.1. Profile of the respondents

Table 4.1: Shows the profile of the respondents.

Respondents	Frequency (fo)	Percentage (%)
Sex		
Male	40	57
Female	30	43
Total	70	100
Age		
18-25 yrs	20	28
26-35 yrs	30	43
36 and above	20	28
Total	70	100
Academic level		
Certificate	15	21
Diploma	25	36
Degree	30	43
Total	70	100

Source field data

Eighty (80) questionnaires were distributed to the teachers and 70 were filled and returned this therefore represents 88 % of the total number of questionnaires that were distributed.

The study covered 70 randomly selected teachers of whom 40 (57%) were male and 30(43%) were female

The age category of the respondents was divided in three groups that is 18-25 were 20 which represents (28%), 26-35 yrs were 30(43%) and 36years and above were 20 representing (28%) of the respondents.

The academic level of the respondents was divided in three categories that is certificate, diploma and degree. 15(21%) of the respondents had certificates, 25(36%) had diploma and 30(43%) were of degree level.

The interviews were held with parents in the language that they understood.

Presence of feeding programs

The respondents were asked whether they have feeding programs in your school and this was their response

Table 4.2 There are feeding programs

Response	Frequency	Percentage
Yes	60	86
No	10	14
Total	70	100

Source field data 2009

According to the table, 60(86%) of the respondents agreed that they have feeding programmes and 10(14%) disagreed. The research revealed that many school feed their children since they are young.

4.2. Nutrition and academic performance of early childhood

The first research objective was to investigate the impact of nutrition on academic performance of early childhood in Selected Early Childhood Centres. To achieve this, respondents were asked questions related to the objective. Data collected was analyzed under the question: What is the impact of nutrition on academic performance of early childhood in Selected Early Childhood Centres? The results are presented in the subsections below;

4.2.1 Poor nutrition affects academic performance of early childhood

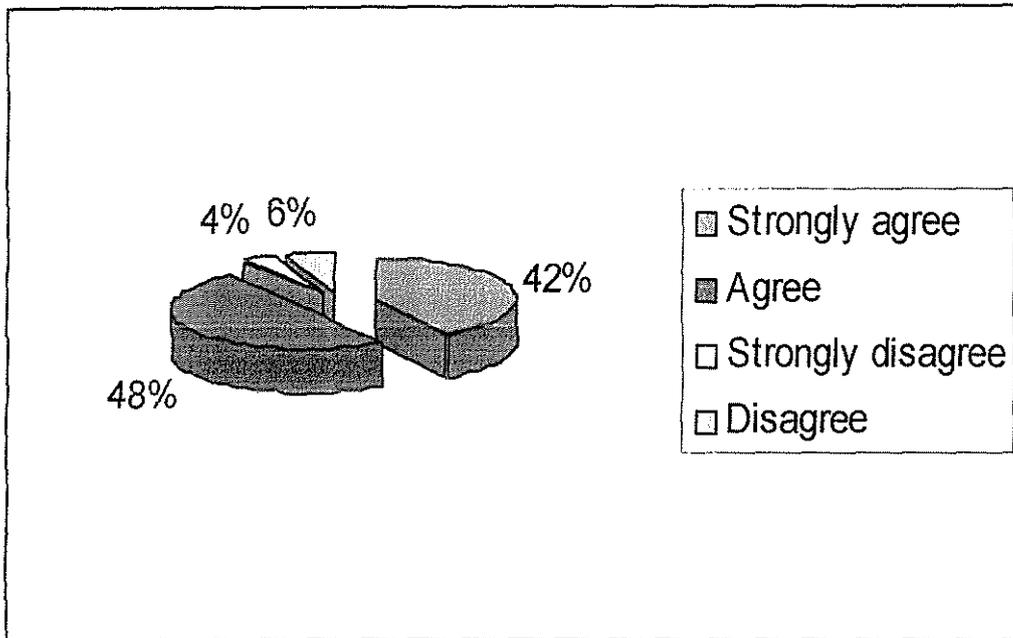
The respondents were whether poor nutrition affects academic performance of early childhood and below were their response

Table 4.3: Opinion on whether poor nutrition affects academic performance of early childhood

poor nutrition affects academic performance of early childhood	Strongly agree	Agree	Strongly disagree	Disagree	Total
Frequency (fo)	30	35	1	4	100
Percentage (%)	43	50	4	6	100

Source field data 2009

Chart 4.3: Opinion on whether poor nutrition affects academic performance of early childhood



The table shows that 30(43%) of the respondents agreed that poor nutrition affects academic performance of early childhood, 35(50%) agreed while 1(1%) strongly disagreed and 4(6%) disagreed.

The parents agreed that poor nutrition hindered academic achievement in a way that if pupils cannot concentrate in class then the performance will not be good which leads to repetition and hence school drop out. This means that the goal of government is not realized that is achieving education for all.

According to Pollitt, et al (1993). Good health and nutrition are needed to achieve one's full educational potential because nutrition affects intellectual development and learning ability

(Alderman et al 1997) suggest that Nutrition affects school performance indirectly as well. Undernourished children (low height-for-age) tend to be enrolled later in school than better-nourished children. This could be because parents deem shorter children to be younger, because they do not believe the children are physically large enough to attend school, or perhaps because

they are investing more in the better-nourished children. In any case, late enrollment compounds the problems of intellectual impairment caused by nutritional deficits.

4.2.2. Lack of concentration in class

The respondents were asked whether poor nutrition leads to lack of concentration in class and this was their response

Table 4.4: Opinion on whether Poor nutrition leads to lack of concentration in class

poor nutrition leads to lack of concentration in class	Strongly agree	Agree	Strongly disagree	Disagree	Total
Frequency (fo)	30	30	5	5	100
Percentage (%)	43	43	7	7	100

Source field data 2009

According to the table, 30(43%) of the respondents strongly agreed that poor nutrition leads to lack of concentration in class, 30(43%) agreed while 5(7%) strongly disagreed and 5(7%) disagreed.

4.2.3. Nutrition is essential for education out come

The study revealed that if the children are not properly fed, they will no concentrate in class because they will be hungry.

Table 4.5: Opinion on whether good nutrition is essential for good educational outcomes

Good nutrition is essential for good educational outcomes	Strongly agree	Agree	Strongly disagree	Disagree	Total
Frequency (fo)	45	25	-	-	100
Percentage (%)	64	36	-	-	100

Source field data 2009

The table shows that 45(64%) of the respondents strongly agreed that good nutrition is essential for good educational outcomes and 25(36%) agreed.

The parents revealed that good nutrition results into good results in that the children concentrate on what the teacher is teaching because they are not hungry.

According to (Berkeley Seth and dean Johnson 1991) Nutrition and health problems impinge on the quality of the biochemical organism and impinge the acquisition of skills and abilities needed to progress satisfactorily in the primary education.

Recent studies from the nutrition and economics literatures reaffirm the importance of nutrition for the cognitive achievement and school enrollment of children. Nutrition is also important for development of a country because whether the children are healthy they will study well and therefore are future leaders.

4.2.4. Proper nutrition, health care, and stimulation during the early years

The respondents were asked whether Proper nutrition, health care, and stimulation during the early years improve learning and other abilities and this was their response

Table 4.6: Opinion on whether proper nutrition, health care, and stimulation during the early years

Proper nutrition, health care, and stimulation during the early years improve learning and other abilities	Strongly agree	Agree	Strongly disagree	Disagree	Total
Frequency (fo)	26	34	7	3	100
Percentage (%)	37	49	10	4	100

Source field data 2009

According to the table, 26(37%) of the respondents strongly agreed that Proper nutrition, health care, and stimulation during the early years, 34(49%) agreed while 7(10%) strongly disagreed and 3(4%) disagreed.

The parent agreed that Proper nutrition, health care, and stimulation during the early years improve learning and other abilities

4.3. Nutrition and the healthy development of children

The second research objective was to determine the impact of Nutrition on the healthy development of children in Selected Early Childhood Centres. To achieve this, respondents were asked questions related to the objective. Data collected was analyzed under the question: What is the impact of Nutrition on the healthy development of children in Selected Early Childhood Centres? The results are presented in the subsections below;

4.3.1 Nutrition is essential for growth and development, health, and well-being

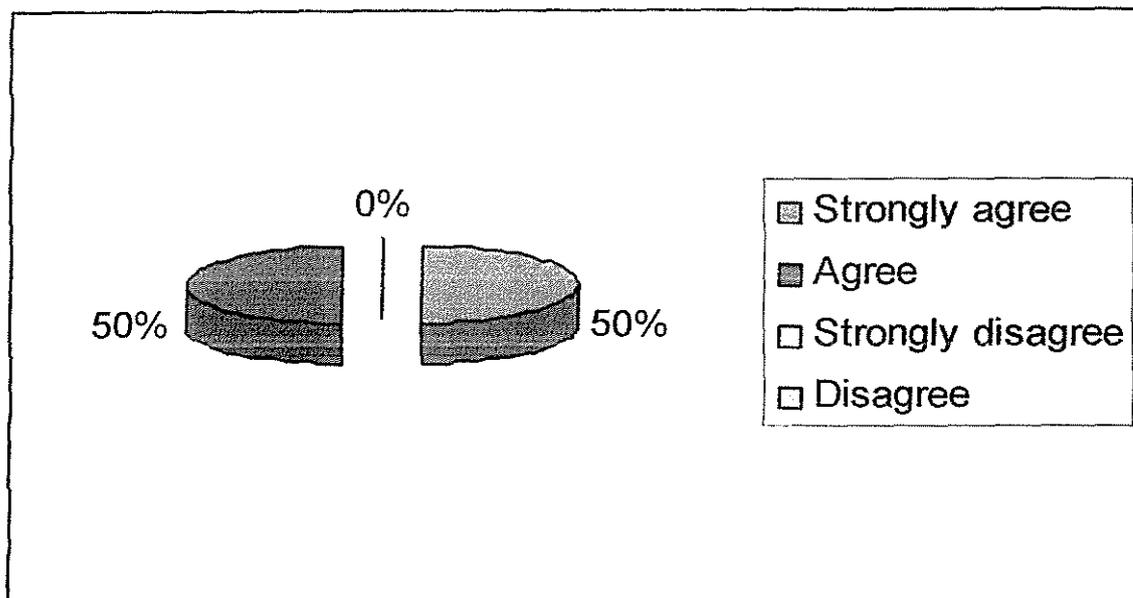
The respondents were asked whether Nutrition is essential for growth and development, health, and well-being and this was their response

Table 4.7: Opinion on whether Nutrition is essential for growth and development, health, and well-being

Nutrition is essential for growth and development, health, and well-being	Strongly agree	Agree	Strongly disagree	Disagree	Total
Frequency (fo)	35	35	-	-	100
Percentage (%)	50	50	-	-	100

Source field data 2009

Chart 4.7: Opinion on whether Nutrition is essential for growth and development, health, and well-being



The table and chart shows that 35(50%) of the respondents strongly agreed that Nutrition is essential for growth and development, health, and well-being and 35(50%) agree. This means that nutrition is essential on children well-being.

It was established from parents that feeding children properly helped them develop well and healthy hence concentrate in class.

According to (Levinger beryl 2000) Nutrition is essential for growth and development, health, and well-being. Proper nutrition, health care, and stimulation during the early years improve learning and other abilities. Nutritional Programs facilitate the development of a child in all its dimensions and have considerable long-lasting effects on the child's life.

4.3.2 Nutrition during the first 3 years

The respondents were asked whether Poor nutrition during the first 3 years often permanently hampers a child's mental development and below were their response

Table 4.8: Poor nutrition during the first 3 years often permanently hampers a child's mental development

Poor nutrition during the first 3 years often permanently hampers a child's mental development	Strongly agree	Agree	Strongly disagree	Disagree	Total
Frequency (fo)	40	30	-	-	100
Percentage (%)	57	43	-	-	100

Source field data 2009

The table shows that 40(57%) of the respondents strongly agreed that Poor nutrition during the first 3 years often permanently hampers a child's mental development and 30(43%) agreed.

The study revealed that the child's mental development is determined at the early age.

Cravioto, J. and Patricia Cravioto. (1990) suggests that Poor nutrition during the first 3 years often permanently hampers a child's mental development. Some children start out growing well but over time begin to fall off, both in weight gain and then in height. If the condition progresses, FTT children may become apathetic and irritable and may not reach milestones, such as sitting up or walking at the usual age.

4.3.3 Poor nutrition leads to other diseases

The respondents were asked whether Poor nutrition leads to other diseases and below were their response

Table 4. 9: Opinion on whether Poor nutrition leads to other diseases

Poor nutrition leads to other diseases	Strongly agree	Agree	Strongly disagree	Disagree	Total
Frequency (fo)	25	20	10	15	100
Percentage (%)	36	28	14	21	100

Source: Primary Data

The table shows that 25(36%) of the respondents strongly agreed that Poor nutrition leads to other diseases, 20(28%) agreed while 10(14%) of the respondents strongly disagreed and 15(21%) of the respondents disagreed. According to the study nutrition leads to other diseases like worm infection that affect children's education.

Berkely seth and dean Johnson (1991) suggests that Most commonly, malnourished people either do not have enough calories in their diet, or are eating a diet that lacks protein, vitamins, or trace minerals Latham m.et al 1991. Medical problems arising from malnutrition are commonly referred to as deficiency diseases. Scurvy is a well-known and now rare form of malnutrition, in which the victim is deficient in vitamin C.

4.3.4 Poor nutrition leads to obesity

The respondents were asked whether Poor nutrition leads to obesity and this was their response

Table 4.10: Opinion on whether Poor nutrition leads to other diseases

Poor nutrition leads to obesity	Strongly agree	Agree	Strongly disagree	Disagree	Total
Frequency (fo)	27	33	2	8	100
Percentage (%)	39	47	2	11	100

Source: Primary Data

The table indicates that 27(39%) of the respondents strongly agreed that Poor nutrition leads to obesity, 33(47%) agreed while 2(2%) strongly disagreed and 8(11%) disagreed.

4.4. Impact of nutrition on enrolment and attendance of children in schools

The last research objective was Determine the Impact of nutrition on enrolment and attendance of children in schools in Selected Early Childhood Centres. To achieve this, respondents were asked questions related to the objective. Data collected was analyzed under the question: What is the Impact of nutrition on enrolment and attendance of children in schools in Selected Early Childhood Centres? The results are presented in the subsections below;

The study revealed that poor nutrition leads to truancy. In this case, children do not attend school or miss classes because they are hungry. Children also miss school due to sickness caused by poor nutrition. Children do not attend school on a regular basis.

Children in poor health start school later in life or not at all. A study in Nepal found that the probability of attending school was 5% for stunted children versus 27% for children of normal nutritional status (Moock and Leslie, 1986). In Ghana malnourished children entered school at a later age and completed fewer years of school than better nourished children (Glewwe and Jacoby, 1994). The number of days that a child attends school is related to cognition and

performance (Ceci, 1995; Jacoby, Cueto and Pollitt, n.d.). SFPs can have a positive effect on rates of enrollment and attendance.

The study also established that poor nutrition leads to low enrolment. In this case few children join early childhood education centers.

The study established that because of poor nutrition, children drop out of school. In this case children will decide to leave school because he is always hungry at school.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

The major purpose of the study was to determine Nutrition and Academic Performance of Learners in Selected Early Childhood Centres in Kiharu Division Murang'a District Kenya. The specific objectives of the study were to investigate the impact of nutrition on academic performance of early childhood, to determine the impact of Nutrition on the healthy development of children and to determine the Impact of nutrition on enrolment and attendance of children in schools in Selected Early Childhood Centres in Kiharu Division Murang'a District Kenya

5.1 Summary of the findings

Nutrition and academic performance of early childhood

The first research objective was to investigate the impact of nutrition on academic performance of early childhood in Selected Early Childhood Centres. The study revealed that Poor nutrition affects the academic performance of early childhood, Poor nutrition leads to lack of concentration in class, Poor nutrition leads to lack of morale in studies, Good nutrition is essential for good educational outcomes and Proper nutrition, health care, and stimulation during the early years improve learning and other abilities

According to Pollitt, et al (1993). Good health and nutrition are needed to achieve one's full educational potential because nutrition affects intellectual development and learning ability

(Alderman et al 1997) suggest that Nutrition affects school performance indirectly as well. Undernourished children (low height-for-age) tend to be enrolled later in school than better-nourished children. This could be because parents deem shorter children to be younger, because they do not believe the children are physically large enough to attend school, or perhaps because they are investing more in the better-nourished children. In any case, late enrollment compounds the problems of intellectual impairment caused by nutritional deficits.

Nutrition and the healthy development of children

The second research objective was to determine the impact of Nutrition on the healthy development of children in Selected Early Childhood Centres. The study revealed that Nutrition is essential for growth and development, health, and well-being, Poor nutrition during the first 3 years often permanently hampers a child's mental development, Poor nutrition leads to other diseases and Poor nutrition leads to obesity

According to (Levinger beryl 2000) Nutrition is essential for growth and development, health, and well-being. Proper nutrition, health care, and stimulation during the early years improve learning and other abilities. Nutritional Programs facilitate the development of a child in all its dimensions and have considerable long-lasting effects on the child's life.

Cravioto, J. and Patricia Cravioto. (1990) suggests that Poor nutrition during the first 3 years often permanently hampers a child's mental development. Some children start out growing well but over time begin to fall off, both in weight gain and then in height. If the condition progresses, FTT children may become apathetic and irritable and may not reach milestones, such as sitting up or walking at the usual age.

Impact of nutrition on enrolment and attendance of children in schools

The last research objective was Determine the Impact of nutrition on enrolment and attendance of children in schools in Selected Early Childhood Centres.

The study revealed that poor nutrition leads to truancy. In this case, children do not attend school or miss classes because they are hungry. Children also miss school due to sickness caused by poor nutrition. Children do not attend school on a regular basis

The study also established that poor nutrition leads to low enrolment. In this case few children join early childhood education centers.

The study established that because of poor nutrition, children drop out of school. In this case children will decide to leave school because he is always hungry at school.

Children in poor health start school later in life or not at all. A study in Nepal found that the probability of attending school was 5% for stunted children versus 27% for children of normal nutritional status (Moock and Leslie, 1986). In Ghana malnourished children entered school at a later age and completed fewer years of school than better nourished children (Glewwe and

Jacoby, 1994). The number of days that a child attends school is related to cognition and performance (Ceci, 1995; Jacoby, Cueto and Pollitt, n.d.). SFPs can have a positive effect on rates of enrollment and attendance.

5.2 conclusions

The major purpose of the study was to determine Nutrition and Academic Performance of Learners in Selected Early Childhood Centres in Kiharu Division Murang'a District Kenya. The specific objectives of the study were to investigate the impact of nutrition on academic performance of early childhood, to determine the impact of Nutrition on the healthy development of children and to determine the Impact of nutrition on enrolment and attendance of children in schools in Selected Early Childhood Centres in Kiharu Division Murang'a District Kenya

The study revealed that Poor nutrition affects the academic performance of early childhood, Poor nutrition leads to lack of concentration in class, Poor nutrition leads to lack of morale in studies, Good nutrition is essential for good educational outcomes and Proper nutrition, health care, and stimulation during the early years improve learning and other abilities

The study revealed that Nutrition is essential for growth and development, health, and well-being, Poor nutrition during the first 3 years often permanently hampers a child's mental development, Poor nutrition leads to other diseases and Poor nutrition leads to obesity

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The study also established that poor nutrition leads to low enrolment. In this case few children join early childhood education centers

The study established that because of poor nutrition, children drop out of school. In this case children will decide to leave school because he is always hungry at school.

5.3 Recommendations

From the ongoing discussion, the following are the recommendations that were made to help Nutrition and academic performance of pupils.

Nutritional and feeding programs should be introduced in schools and government should monitor and supervise the exercise.

The parents and the community should be sensitized on the importance of nutrition on early childhood and also taught how to feed their children what is right and important.

Nutrition education is important and therefore should be emphasized in schools and taken seriously. In this case parents and teachers should be taught the importance of feeding children at school.

Areas for further research

More research should be done on the topic of Nutrition and academic performance on early childhood

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