

Number of Meals Consumed by the Pre-School Age Going Children and Its Relationship to the Status of Pre-School Attendance in Kenya

Catherine Gakii Murungi

School of Education Department of Early Childhood Studies, Kenyatta University. E-mail:

Catherine_gakii@yahoo.com

ABSTRACT

This survey research studied the number of meals that children consume in a day and their school attendance. The study is a correlation study employing a survey method with a sample of 390 children whose parents participated in the study. The main objective of the study was to establish the number of meals that pre-school age going children in Kenya consume in a day. The study is conducted in five Kenyan divisions. The researcher utilized a questionnaire to parents of pre-school age going children with children attending and children not attending pre-school education. The t-test (two tailed) for testing equality of means for independent samples was used to test H01. This study concludes that A t-test (two tailed) for independent samples found a significant relationship between the number of meals consumed in a day and attendance in pre-school.

Introduction

Children's nutritional status is affected by poor feeding habits as well as diseases (Piwoz &Preble, 2000). Poor feeding and diseases leads to undernourishment as well as in adequate provision of children's needs (Latham, 1988; Applied Nutrition Program, 2000). This affects children's growth and development. When the body does not get adequate supply of food; it becomes weak and cannot develop or function properly (WHO, 2002). Children, who are undernourished lack energy and strength to play, learn and are likely not to attend pre-school. These children require taking more meals in a day so as to cater for their energy and strength needs. The number of meals children take per day influences the nutritional status (ACC/SCN, 1998). This necessitated the need to establish the number of meals the pre-school age going children consume in a day.

Adequate supply of foods is important as it makes a child healthy, makes a child grow, prevents diseases and provides energy (ACC/SCN, 1998; Abidoye & Eze, 2000). In addition when children do not take adequate number of meals recovery from infections takes longer WHO (2002). Study by Gakuru and Koech (1995) indicated that foods and nutrition supply for pre-school children may not be adequately met even when there is adequate food supply. To meet adequate supply of nutrients, FSAU (2003) rightly states that children require more than three balanced meals per day. Similarly Fanta (2001) recommends that pre-school children should be fed with a variety of foods distributed to at least 5 – 6 meals a day. Further to this Mwema (2006) found that taking less than five meals per day leads to an increased number of stunted children. In line with this view is that taking less than five meals in a day leads to inadequate energy and protein intake which contribute to stunting (Applied Nutrition Program, 2000; Jukes, 2005) and that poor complementary feeding practices lead to increased stunting (Meme, 1996 and Zoakah et al; 2000). The emphasis here is on the number of meals and their distribution per day. The reason for distributing meals is to ensure adequate supply of nutrients throughout the day. This made it crucial to find out the number of meals consumed by pre-school children in a day as well as establish its relationship with attendance in pre-school, given that reduced number of meals per day relates to children's attendance in pre-school.

According to the World Bank report (1993) on better health for Africa, 32% of the children in Kenya have stunted growth while 5% of them were wasted. The demographic health survey in Kenya (KDHS, 2003) also documents that 34% of the children were moderately stunted and 15% were severely stunted as demonstrated by low weight for age (W/A). In considering weight for height (W/H), 6% of the children below five years were wasted and 2% were severely wasted (KDHS, 2003). The millennium development goals report (2005) also revealed that there was a prevalence of underweight children less than 5 years of age. By 2003, 20% of the children below five years were underweight while the prevalence of children who were wasted declined from 6.6% in 2000 to 6% in 2003. We cannot ignore the fact that inadequate food intake (poor diet) leads to underweight, which denies a child ability to become active in the environment including the ability to attend pre-school.

Children's nutritional status strongly influences their development and the general quality of life they experience. Unfortunately, a majority of children in the world and many children in Kenya do not receive proper nutrition (Silkind 1990). This means that they do not get enough proteins for building body cells, enough vitamins and minerals for structural development, or enough carbohydrates for energy (Silkind 1990). Many reports and studies investigated the relationship between foods, nutrition and a child's development. However, no available study at least in Kenyan context has investigated the relationship between the numbers of meals consumed in a day and attendance in pre-school, hence the need for this study.

Objectives of the Study

The specific objective of this study was to establish the number of meals consumed by the pre-school age going children and the relationship between the number of meals children consume in a day and attendance in pre-school.

Research Question and Hypothesis

The study specifically answered the following basic question, what is the relationship between the number of meals consumed and attendance in pre-school? It also specifically tested the following hypothesis: H_{01} . There is no relationship between the number of meals consumed and children's attendance in pre-school education.

MATERIALS AND METHODS

Research Design

This study was a correlation study employing a survey method. The survey method was found suitable for the present study since it does not require manipulation of variables.

Variables

The independent variable was; the number of meals consumed in a day and the dependent variable was children's attendance in the pre-school education.

Description and Characterization of Variables

Independent Variable

The independent variable food was measured through the meal patterns and nutritional status of pre-school age children. Pre-school age children are supposed to be fed with a variety of foods distributed to at least 5-6 meals a day (Fanta, 2001). For the purpose of this study if children were served with at least three main meals in a day, and snacks in between, then that indicated adequate food intake and less than three balanced meals per day indicated inadequate food intake. The number of meals consumed per day was compared for children attending pre-school and those not attending, and then the results were correlated to establish the relationship between number of meals consumed in a day and children's attendance in pre-school education.

Dependent Variable

The dependent variable school attendance was measured by collecting views from parents on their children's pre-school attendance.

Location of Study

The study was conducted in five Kenyan divisions.

Target Population and sample size

The target population for the study was 78,201 pre-school age going children aged between 4-5 years. From this target population of 78,201 a sample of 390 pre-school age going children that were attending pre-school and children not attending pre-school education were selected.

Research Instruments

The study utilized the questionnaire for parents in data collection. The questionnaire was administered to parents with children attending pre-school and parents with children not attending the pre-school education at the time of study.

Data Analysis

A t-test (two tailed) was used to test H_{01} , The t-test (two tailed) was found suitable to test the relationship between variables in H_{01} since looking at the difference between variables is also the same thing as looking at how variables relate to each other. In using t-test (two tailed) to test the relationship between variables it means that, if two variables are significantly different then, they are related (Obure, 2002).

Results

Information on Meal Pattern

This study found that majority of pre-school age going children 323 (83%) in Kenya do take breakfast, with only 67 (17%) children not taking this important meal. With regard to 10 o'clock snack, the trend changes with 258 (66%) not taking this meal. This figure includes children attending pre-schools where this meal is prepared on a daily basis. The reason attributed to children not taking the 10 o'clock snack by the parents with children attending pre-school was that the school porridge program was expensive for the pre-school parents to afford. Only 132 (34%) children of the pre-school age going took this meal.

Most children took lunch 348 (89%) with only 42 (11%) of the children in the whole division not taking lunch. Very few children took the four o'clock snack in the division, only 80 (21%) of children in the division took this meal, the remaining 310 (79%) did not take the meal during the time of study. A large percentage of children 85% (330) took the evening meal.

After taking the evening meal, a smaller number of children took a snack before going to bed, only 41 (11%) while 349 children (59%) did not take any snack after the evening meal. Although a very small number of children took this snack, it was interesting to note that no child took this snack in one of the locations (Ntankira location). The researcher found that consumption of the three main meals which were breakfast, lunch and supper was higher than consumption of the snacks in all the five locations as indicated in table; 1, 2 and 3.

Table 1: Number of Meals Children Consumed per Each Location in Kenya

Meal consumed	Location					Total
	Location one (Ntankira)	Location two (Municipality)	Location three (Nthimbiri)	Location four (Ntima)	Location five (Igoki)	
Breakfast	62	62	69	64	66	323
Snack 1	17	34	27	26	28	132
Lunch	67	66	70	72	73	348
Snack 2	9	21	19	7	24	80
Supper	68	58	69	66	69	330
Snack 3	0	12	17	4	8	41
Total	223	253	271	239	268	

Table 2: Number of Main Meals Consumed in a Day in the five Kenyan Divisions

Location	less than three main meals freq.	%	three main meals freq.	%	frequency totals	percentage totals
Location five (Igoki)	20	25.6	58	74.4	78	100
Location two (Municipality)	34	43.6	44	56.4	78	100
Location one (Ntankira)	31	39.8	47	60.3	78	100
Location three (Nthimbiri)	17	21.8	61	78.2	78	100
Location four (Ntima)	27	34.6	51	65.4	78	100

Table 3: Number of all the Meals Consumed in a Day and Children’s Attendance in Pre-school education in Kenya

Number of meals consumed in a day	Not attending pre-school	Attending pre-school	Total
Breakfast			
Freq.	142	181	323
%	72.8	92.8	82.8
Lunch			
Freq.	161	187	348
%	82.5	95.8	89.2
supper			
Freq.	152	178	330
%	77.9	91.2	84.6
Snack 1			
Freq.	18	114	132
%	9.2	58.5	33.8
Snack 2			
Freq.	6	74	80
%	3.1	37.9	20.5
Snack 3			
Freq.	2	39	41
%	1.0	20	10.5

Table 3 shows the number of main meals and snacks consumed by children attending and children not attending pre-school in the five Kenyan divisions.

Meals Consumed in a Day and Attendance in Pre-school

The objective of this study was to determine the relationship between the number of meals consumed and attendance in pre-school. The hypothesis stated was: H_{01} . There is no significant relationship between the numbers of meals consumed in a day and attendance in pre-school. This hypothesis was tested using t-test (two tailed) and the results are in table 4 and 5.

Table 4: Meals Consumed and Attendance in Kenyan Pre-schools (N=195)

	Children’s attendance in pre-school	Mean	Std. Deviation
Number of meals consumed	Attending	3.96	1.150
	Not attending	2.47	0.755

Table 4.shows the mean scores of the number of meals consumed in a day for children’s attending pre-school was 3.96 and for children not attending pre-school was 2.47.

Table 5: Independent Samples Test for Number of Meals Consumed and Attendance in Pre-school in the five Kenyan divisions

	A t-test (Two-tailed) for Equality of Means			
	t	df	Sig. (2-tailed)	Mean Difference
Number of meals consumed	15.197	388	0.000	1.497

Table 5: shows the mean difference was 1.497 and the significance level was 0.000 (2-tailed).

The t-test (two tailed) was used to determine the relationship between the independent variable food which was measured by the number of meals consumed in a day and the dependent variable attendance in pre-school education. The results show that there is a significant difference in the number of meals consumed between children attending pre-school (have a mean of 3.96) and children not attending pre-school (2.47). This implies that there is a significant relationship between the number of meals consumed in a day and attendance in pre-school. The results in table 5 also shows that the mean difference in the number of meals for children attending pre-school and children not attending pre-school was 1.497, with 0.000 level of significance (2- tailed). The results reveal that the difference between the two means is significant at 0.05. The null hypothesis was therefore rejected. The hypothesis was rejected, because the more the number of meals children consumed in a day, the higher the number of pre-school age going children who attended pre-school as assessed by the questionnaire utilized in this study. This shows that the numbers of meals consumed are related to attendance in pre-school among the pre-school age going children ($p = 0.000 < 0.05$). This study fills the gap left by the studies that investigated the relationship between foods, nutrition, brain development, learning ability and child development but did not investigate the relationship between food and attendance in pre-school education. The relationship between the number of meals consumed and attendance in pre-school can be explained by the fact that with at least three meals and snacks in between, there is less likelihood of weight loss.

The relationship between the number of meals consumed and attendance in pre-school can be attributed to the fact that the more the number of meals consumed, the more the likelihood of adequate supply of energy (FAU 2005). This finding is also closely related to that of Mwema (2006) that the number of meals consumed in a day is related to stunting. Stunting has been found in this study to have a positive relationship with attendance in pre-school. The relationship between the number of meals consumed in a day and attendance in the pre-school could be because of several reasons:

First, the children attending pre-school take more than three meals per day which the children not attending pre-school were not taking. This is supported by FSAU, (2003) who stated that to meet adequate supply of nutrients; children require more than three nutritionally balanced meals in a day. Similarly Fanta, (2001) recommends that children should be fed with a variety of meals distributed to at-least 5-6 meals a day so as to ensure adequate supply of nutrients throughout the day, children who take less meals lack adequate supply of nutrients hence may not attend pre-school.

Second, inadequate food intake has been associated with poor health and low nutritional status. Findings by ACC/SCN (1998) indicated that the number of meals taken per day will influence the nutritional status of children, which in turn, might hinder attendance in pre-school. The same study shows that when inadequate intake of food is prolonged, it gives rise to protein energy malnutrition (PEM). Wasting in children reflects acute malnutrition, but with at least three main meals and snacks in between, there are less likelihood of wasting and underweight in children WHO (2002).

Third, when the body does not get adequate supply of food, it becomes weak and cannot develop or function

properly (WHO, 2002). A hungry child may be weak and may be less motivated to go to school which may lead to children not attending pre-school. Fourth, hunger is a drive activated by the hypothalamus gland in the fore brain; it results in dizziness, weakness and light headiness. Hunger pangs are felt in the stomach. Stomach demands for food by growling. This makes food important to the child since after all the processes indicated above only food will give them energy, keep them warm as well as build and repair their bodies.

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