Prevalence of Malnutrition of Pupils in Primary Schools in Ado Local Government Area of Ekiti State, Nigeria

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Abstract: ***The study investigated the prevalence of malnutrition of pupils in selected primary schools in Ado local government area of Ekiti state, Nigeria . The study population was drawn from Public Primary School (PPS), Private Primary School (PRPS) and State Pilot Primary School (SPPS) in the Ado local government area of Ekiti State. Purposive Sampling techniques were used for the selection of respondents. A total 200 primary school student comprising of 120(60%) females and 80 (40%) males participated in the study. Well tested and validated questionnaires were used to elicit information from the respondents. Two research questions were raised and tested. The result revealed a high prevalence of malnutrition among the selected pupils in primary schools, using Body Mass Index (BMI). Prevalence of malnutrition was significantly higher in Public primary school (PPS under weight: 18.5% and overweight 10.5%) followed by Private primary school (PRPS under weight :10.5% and over weight :15.5%) and State Pilot primary school (SPPS under weight: 9.0% and over weight :111.0%). Hence, it is recommended that activities to reduce the prevalence of malnutrition should be encouraged.***

Keywords*:* Malnutrition, Nutritional Status, Body mass index, Anthropometry

1. Introduction

Primary Education as referred to in the National Policy of Education is the education given in institutions for children aged 6 to 11 plus. Since the rest of the education system is built upon it, the primary level is the key to the success or failure of the whole system [12]. Nutrition is the intake of food, considered in relation to the body's dietary needs. Malnutrition as defined is the lack of sufficient quantity or quality of nutrient to maintain the body system at some definable level of functioning. Good nutrition and well balanced diet combined with regular physical activity is a cornerstone of good health. Poor nutrition can lead to reduced immunity, increased susceptibility to disease, impaired physical and mental development, and reduced productivity. Children at low socioeconomic levels are at-risk for poor nutrition. The condition of malnutrition as a result of low socioeconomic status of the parents could result to children not getting enough to at which may lead to insufficient daily calories or children consume enough food but have diets high in fact, sugar and sodium that put them at risk for obesity or heart disease and other chronic illness. Furthermore, as the number of parents in the workforce increases, more children are being left to fend for themselves for meals. Nutrition still remains one of the major problems affecting the school children. According to [8] and [10], malnutrition caused approximately 50% of children death worldwide, making the UN'S Millennium development goal to eradicate extreme poverty and hunger by 2015 particularly ambitious [3].

In 2009, the Food and Drug Administration (FAD) reported that a pilot study in 107 schools, provide free fresh fruits and vegetables during lunch, combined with exercise found that the extra nutritional support resulted in measurable increase in students attentiveness accompanied by better on task and behavior and reduced dispensary problem. Also proper nutrition is critical to maximizing brain function and enhancing learning. Helping children develop healthful habits from a young age will aid them in reaching optimal potential [8]. Malnutrition even at almost epidemic level in these countries despite UNICEFS alert in 2011 that over one million children will suffer severe acute malnutrition in 2012. However in States of Nigeria and Lagos for example the silent crisis is largely crippling them. Dr. Esentat Niyi Oyedokun UNICEF Nutrition specialist in a presentation at two-day Media Dialogue on child malnutrition in Nigeria held in Kano recently posited that essential nutrition actions was needed as well as multi sectorial approach to tackle the problem.

[13] stated that majority of people in Nigeria are illiterates, hence education has a vital role to play in improving the nutritional intake of the people. Education moves the individual from lack of interest and ignorance to increasing appreciation, knowledge and finally, action. In Nigeria, some people believe superstitions in some parts of the country which forbid pregnant women from eating some rodent or bush-meat in order not have or deliver a deformed child, some children should not be giving egg or meat so as to prevent the child from sealing in future. This belief is against the recommendations of authorities on nutrition who claim that pregnant women need more of protein food than ever. Bush meat is a good Source of protein. In an attempt to achieve health for all by the Year 2015, unwholesome food habits must be modified so that the school children would be able to perform better academically in their schools. Relationships between nutrition and brain function have been the focus of much research. Food consumption is vital to the

brain being able to make the right amount of Amino acids and Chlorine. These are two precursor molecules obtained from the blood that are needed for the brain to function normally. It is no surprise that what we eat directly influences the brain [1]. Similarly, [4] also found that zinc was another nutrient that had a role with cognition, specifically with Nutrition and Academic Performance. In a test of mental function called verbal memory, scientists found that volunteers' abilities to remember everyday words slowed significantly only after three weeks of a low-zinc diet [11]. Likewise, [2] pointed out five key components, based on research, required to keep the brain functioning correctly. The substances, all found in food, are important to brain development and function. Proteins are found in foods such as meat, fish, milk, and cheese. They are used to make most of the body's tissues, including neurotransmitters chemical messengers that carry information from brain cells to other brain cells. A lack of protein, also known as Protein Energy Malnutrition, led to poor school performance and caused young children to be lethargic, withdrawn, and be passive, all of which help affect social and emotional development. Carbohydrates are commonly found in grains, fruits, and vegetables. Carbohydrates are broken down into glucose (sugar) from where the brain gets its energy. Fluctuating levels of carbohydrates may cause dizziness and mental confusion, both of which can affect cognitive performance. Eating a carbohydrate-heavy meal can cause one to feel more calm and relaxed because of a brain chemical called serotonin and its effect on mood. Serotonin is created within the brain through the absorption and conversion of tryptophan. Tryptophan is absorbed within the blood and this absorption is enhanced with carbohydrates [2]. Erickson also noted that fat makes up more than 60% of the brain and acts as a messenger in partial control of aspects such as mood. Omega-3 fatty acids are very important to the optimum performance of the brain and a lack of these fats can lead to depression, poor memory, low IQ, learning disabilities, dyslexia, and add important foods to consume to ensure an Omega-3 [2]. Vitamins and minerals also an important substance for the functioning of the brain. Most important are the vitamins A, C, E, and B complex vitamins. Manganese and magnesium are two minerals essential for brain functioning; sodium, potassium and calcium play a role in message transmission and the thinking process, research has shown that Omega-3 fatty acids such as those found in fruit and walnuts, provide many benefits in improving memory and learning, much of which occurs at the synapses. [5] examined the effect of stunted growth on the nature of cognitive impairments and on the rate of cognitive development. The study investigated if malnutrition would result in a concentrated impairment and a general slowing in the rate of development of all cognitive processes or these effects could be present for some specific cognitive processes. Effects of malnutrition on cognitive processes were also looked at in relation to impairment without affecting the rate of development and its effect on the rate of development of the cognitive process itself. The participants were identified as being malnourished or adequately nourished in the age groups of five- to seven-year olds and eight- to ten-year olds. Students in the malnourished group were identified by their height (stunting) and weight (wasting) of children in the same age categories with reference to the national center of health statistics (NCHS). Height for age/weight for height score less than two standard deviations from the mean were considered an indicator for moderate to severe malnutrition. Adequately nourished students were identified as children who were in or above the 50th percentile of height and weight as stated by the NCHS standards. Adequately nourished students were paired with malnourished students with respect to age and grade level. Each group had 20 participants [5]. Studies of the effect of malnutrition on cognitive ability indicate that chronic under nutrition is associated with lower achievement levels in school children. Therefore, good nutrition is a powerful tool to achieve one's full educational potential since nutrition affects intellectual development and learning ability [7].

Good nutrition is essential to healthy childhood. Malnutrition is still high side in developing countries even in Nigeria in general and Ekiti State in particular. A growing prevalence of malnutrition and poor academic performance is a major concern in primary schools in Ekiti State for schoolchildren. Despite the efforts of the State government distributing Severe Acute Malnutrition (SAM) materials to referral Centers to be administered free on affected children, and trained health officer on nutrition activities in each of the primary health care centers in the 16 Local Government Areas of Ekiti State and on how to diagnose Severe Acute Malnutrition the record of acute malnutrition still high in some of the local government area in the state. In developing countries this rising epidemic along with the persistence of under nutrition and Infection typifies the Double Burden of Malnutrition (DBM) which is becoming of a great concern for Ekiti State Government. In deed the DBM is a real threat at the population, household and even individual level, it is now observed among school children. Against this backdrop, this study is out to investigate the prevalence of malnutrition of pupils in primary schools in Ado Local Government Area of Ekiti State, Nigeria

2. Research Questions

The following research questions were formulated to guide the study:

1. What is the composite nutritional status of pupils in the primary schools (public primary schools (PPS), private primary school (PRPS) and state pilot primary schools (SPPS)) in Ekiti State?
2. What is the relative nutritional status of pupils in the primary schools (public primary schools (PPS), private primary school (PRPS) and state pilot primary schools (SPPS)) in Ekiti State?

3. Methodology

This study was a descriptive survey involving primary school pupils comprising of male and females within the ages 6-11 years in Ado Local Government Area of Ekiti State. A purposive sampling technique was used to select the sample for the study. A total number of 200 pupils randomly selected from Public Primary Schools (PPS), Private Primary School (PRPS) and State Pilot Primary Schools (SPPS) were used for the study. Anthropometric measurements was based on the standardized method of [15] and [9]. Data obtained from the study was subjected to statistical analysis using descriptive statistics.

4. Results and Discussion

Table 1: Showing the social-demographic variables distribution of the pupils

Pupils' Gender	Frequency	Percentage
Female	120	60.0%
Male	80	40.0%
Total	200	100%
Mother occupation		
Business	50	25.0%
Faming	55	27.5%
Teaching	50	25.0%
Civil Servant	25	12.5%
Housewife	20	10.0%
Total	200	200%
Father Occupation		
Teaching	70	35.0%
Civil Servant	55	27.5%
Business	30	15.0%
Faming	45	22.5%
Total	200	100.0%
House hold size		
1-3	38	19.0%
4-6	72	36.0%
7-9	65	32.5%
Total	200	100.0%

Source: [14]

The result in table 1 shows the basic information of the primary school pupils involved in the studied. A total of two hundred (200) primary school pupils comprising 120 (60%) females and 80 (40%) males randomly selected from Public Primary Schools (PPS), Private Primary School (PRPS) and State Pilot Primary Schools (SPPS) participated in the study. The result of the mothers occupation showed that 25% were engages in business, 27.5% were farmers, 25.0% were teachers, 12.5% were civil servant and 10.0% were housewife. Similarly, the result of the fathers occupation showed that 15% were engages in business, 22.5% were farmers, 35% were teachers and 27.5% were civil servant.

Research Question 1: What is the composite nutritional status of pupils in the primary schools (public primary schools (PPS), private primary school (PRPS) and state pilot primary schools (SPPS)) in Ekiti State?

The table 2 shows the composite nutritional status of pupils in the primary schools (public primary schools (PPS), private primary school (PRPS) and state pilot primary schools (SPPS)) in Ekiti State.

Table 2: Nutritional status of the sampled pupils based on Body Mass Index (BMI) measurement.

School	*Under weight*	*Normal*	*Over weight*	*Total*
Public Primary School (PPS)	37 (18.5%)	12 (6.0%)	21 10.5%	70 (35.0%)
Private Primary School (PRPS)	21 (10.5%)	18 (9.0%)	31 (15.5%)	70 (35.0%)
State Pilot Primary School(SPPS)	18 (9.0%)	20 (10.0%)	22 (11.0%)	60 (30.0%)
TOTAL	76 (38.0%)	50 (25.0%)	74 (37.0%)	200 (100%)

Source: [14].

Table 2 summarizes the nutritional status of the selected primary school pupils in Ado Local Government Area as determined by Body Mass Index measurement. The results showed that a total of 38.0% of the pupils were underweight (BMI below benchmark value.) This was highest in PPS (18.5%), followed by PRPS (10.5%) and 9.0% SPPS respectively.

The overweight also shows that a total of 37.0% of the pupils were overweight (BMI above benchmark value). Majority of which were pupils of PRPS (15.5%) and SPPS (11.1%) and PPS (10.5%) respectively. The normal weight also shows a total of 25.0% of the pupils were normal (BMI normal benchmark value). Pupils of SPPS (10.0%) recorded the highest value, followed by the pupils of PRPS (9.0%) and pupils of PPS (6.0%) recorded the leas value.

Research Question 2: What is the relative nutritional status of pupils in the primary schools (public primary schools (PPS), private primary school (PRPS) and state pilot primary schools (SPPS)) in Ekiti State?

The analysis in the table 2 shows the relative nutritional status of pupils in primary schools (public primary schools (PPS), private primary school (PRPS) and state pilot primary schools (SPPS)) in Ekiti State. Prevalence of malnutrition was significantly higher in Public primary school (PPS under weight: 18.5% and overweight 10.5%) followed by Private primary school (PRPS under weight :10.5% and over weight :15.5%) and State Pilot primary school (SPPS under weight: 9.0% and over weight :111.0%).

Good nutrition is important to supporting growth and maximizing learning potential. Due to current research, we are becoming increasingly educated on the role nutrition plays on the body's and mind's ability to grow and the performance of our potential learning capacity. Nutritional intake affects energy levels, physical stamina, mood, memory, mental clarity, and emotional and mental well-being. Research is proving good nutrition is pertinent for the brain, so the old adage, "You are what you eat" is proving to be true. Parents and educators need to educate today's youth to make healthier food choices because they are being raised in a culture of fast food [6]. Because today's children are being raised during a time when many meals are not being prepared at home, America is seeing the negative outcomes of poor nutritional choices.

Good nutrition is therefore essential in helping growth and maximizing learning potential. Results from researches have

helped us becoming increasingly educated on the role nutrition plays on the body's and mind's ability to grow and the performance of our potential learning capacity. Nutritional intake affects energy levels, physical stamina and mood, memory, mental clarity and emotional mental well-being. Most of the children observed complained of eating food containing an excessive amount of total fat, saturated fat and cholesterol which contributes to health problems that is causing poor academic performance.

5. Conclusion

The findings of this study revealed high prevalence of malnutrition (38.0%) for underweight and 37.0% for overweight among selected public primary school pupils in Ekiti State, using BMI as index. Only 25.0% of the pupils involved in the study recorded normal body weight.

6. Recommendations

Based on the result of this finding, it is therefore recommended that government should reduce the incidence and prevalence of malnutrition. It is also recommended furthermore that parents need to be educated about the importance of good nutrition. Also, there should be activities to reduce the prevalence of malnutrition such as providing food supplement to the children while in the school.

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