
RELATIONSHIP BETWEEN CATEGORIES OF NUTRITIONAL STATUS AND ACADEMIC PERFORMANCE OF FOOD & NUTRITION STUDENTS IN SECONDARY SCHOOLS IN EDO STATE

BY

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ABSTRACT

The study investigated the relationship between categories of nutritional status and academic performance of food and nutrition secondary school students in Edo State. To guide this study, two research questions and hypotheses were formulated. Descriptive survey research design was adopted for the study. The population for this study comprised all the students in SS I in public secondary schools in Edo state. The researcher targeted three hundred and ninety-six (396) students in the study area using multistage sampling techniques. Three schools were randomly selected from urban and rural areas Edo south district each. Adopted Body Mass Index from World Health Organization (WHO), Body Mass Index (BMI) and related to percentile charts BMI was used to determine the nutritional status of the students. Achievement test were conducted and used to determine the degree of achievement in food and nutrition subjects by the students. The instruments were validated by experts. Pilot test was used to determine the reliability of the instrument, a coefficient 0.77 was obtained. Mean statistic was used to analyze the data collected. The findings revealed that the categories of nutritional status have different influence on academic performance of secondary school food and nutrition students. Based on the finding amongst others that parents should provide adequate food, both in quality and quantity for their household, taking large calories of fatty and carbohydrate foods should be discouraged.

INTRODUCTION

A nutritional assessment is an in-depth analysis of both objective and subjective data relating to an individual's food intake, life style, and medical history, once the data of an individual are collected, organized, the practitioner can assess and evaluate the nutritional status of that person (Tontisirin and Henry, 2004). Nutritional status assessment method, make use of objectives, measurable criteria that reflect the changes in anthropometric, biochemical or functional characteristics of food or poor absorption and utilization of ingested food. The study and technique of taking body measurement is known as anthropometric. It is widely used to measure nutritional assessments.

Anthropometric measurements are combined with other data to calculate anthropometric indices. Anthropometric measurement includes body height, body weight, hip circumference, waist-to-hip, triceps skin fold thickness, scapular skin fold thickness, and wrist girth (Chung & Pan 2009).

Measuring body weight and height provides useful data for analyzing growth and for determining body size and composition. Other methods of nutritional assessments are dietary assessments, clinical assessments and biochemical or laboratory test. The selection of methods to be used depends on the age of the individual, the reason for assessment, the resource and expertise available. (Samai, Samai, Bash-Taqi,

Donald, Gage and Taqi, 2009; James 2004; Mackey, 2011). According to Ijadunola and Ijarotimi (2007), Nutrition is a fundamental pillar of human life and development across the entire life span. From the early stage of foetal development, at birth, through infancy, childhood and old age. Good nutrition is essential for the well being, mental development, physical growth, survival, good health, and high productivity,

One of the major public problems over large of the world is malnutrition. It arises from deficiencies from specific nutrients or from diet based on wrong proportion of food which could result to under-nutrition and over-nutrition, resulting from inadequacy of food or excess of food relative to need. (Wikipedia, 2010; Popkin, Richards, Montiero, 1996). Human brain is quite demanding when it comes to energy consumption, that is why people who do not consume enough calories in their diet are more likely to experience changes in their brain function. The main mental fuel is glucose that can be found in carbohydrates. Protein, vitamins, fat & oil, mineral salt and water are also essential to the body but are not manufactured by the body. Therefore, these nutrients must be consumed within daily diet. (Brain Guide 2011).

Rehabcare (2010) reviewed that malnutrition in early life appears to diminish brain function in older adulthood. Hoddinott, Maluccio, Beherman, Martorell, Melger and Yount (2010) explained that malnutrition affects memory formation and memory consolidation. Latham (1997) explained that, there is good evidence to show that certain kinds of malnutrition and nutrition-related diseases can result in mental retardation and severe mental illness. Generally, adolescents' problems are iron deficiency, micro nutrient deficiency, anaemia, malnutrition and related chronic diseases (Delisie, 2012). Therefore, it is important to consume balanced diet for proper functioning of the brain and general well-being.

Statement of the Problem

Academic performance that has been considered as an important factor in educational life of students appears to have declined in recent times. Success in education is measured by academic performance. Figures released by head of W.A.E.C national office in Lagos shows that 31.28 percent of candidates who sat for the examination obtained credit in five subjects and above, in the 2012 WASCE result, only 38.81% of the candidates obtained five credits and above, including Mathematics and English in 2013, the performance declined to 36.57% in 2014. The researcher also collected senior secondary school results on food and nutrition for the 2014/2015 session from four schools in Edo state. The records from the first school showed that only 23% candidates that sat for the examination obtained 50% and above. Result from the second school showed only 23% candidates that obtained 50% and above. Third school, only 39.5% while in the fourth school only 48.1% of the students obtained 50% and above. The trend of continuous poor academic performance of secondary school students have been attributed by many authors to several factors. Stakeholders in the education sector have been trying to proffer solution to these challenges, yet the academic performance of students seems not to have improved, hence the need for this study.

Purpose of the Study

The purpose of this study was

- i to determine the relationship between classification of nutritional status and academic performance of secondary school food and nutrition students in rural areas.
- ii to determine the relationship between classification of nutritional status and academic performance of secondary school food and nutrition students in urban areas

Research of the study

The following research question was raised to guide this study

- i what is the relationship between category of nutritional status and academic performance of secondary school food and nutrition students in rural areas
- ii what is the relationship between category of nutritional status and academic performance of secondary school food and nutrition students in urban areas

METHODOLOGY

The research design adopted for this study is descriptive survey. The population of this study comprises all 8,687 food and nutrition students in SSI in public secondary schools in Edo South Senatorial District of Edo State. Three hundred and ninety-six (396) students were sampled and used for the study. The sample was determined using twenty percent (20%) of the population of the selected schools. Multistage sampling technique was used for the study. Stratified random sampling technique was used in selecting schools from location. Random sampling technique was used to select six schools from Edo state. Three schools each where randomly selected from urban and rural

areas. Proportionate sampling technique was used to select students from each of the selected schools.

The instrumentations used for the study are achievement test and Body Mass Index. The achievement test was adopted West African Examination past food and nutrition examination questions while the Body Mass Index was used to determine the nutritional status of the students. Students' weight and height were measured according to established standards. BMI was calculated as a ratio between weight and height squared with weight in kilogram and height in meters. The calculated BMI and the age were related to the World Health Organization (WHO) recommended percentile chart to classified adolescent BMI as normal weight, underweight, over-weight and obesity. The nutritional statuses of the students were then related to the academic performance to determine its influence. The data collected from the study were analyzed using table of frequencies and weighted mean.

RESULTS OF THE STUDY

Research question One: What is the relationship between category of nutritional status and academic performance of secondary school food and nutrition students in rural areas?

Table I: Mean score on classification of nutritional status and academic performance from rural schools

Classification of Nutritional Status	No. of Respondents	Mean	
		BMI	Achievements
Normal weight	47	19.6	9.02
Under Weight	13	16.49	8.15
Over Weight	4	26.23	5.5
Obese	-	-	-

The total number of students of normal weight in the schools within rural areas, based in sample size used for this study was 47, with a Mean Body Mass Index

of 19.6 and mean achievement test score of 9.02. The total number of underweight students in these schools from rural areas, based on sample size used for this

study was 13, with a mean from Body Mass Index of 16.49 and a mean from achievement test score of 8.15. Also, the total number of overweight students in these schools from rural areas, based on sample size used for this study was 4, with a mean from Body Mass Index of 26.23 and a mean of achievement test score of 5.5.

Research Question Two: What is the relationship between category of nutritional status and academic performance of secondary school food and nutrition students in urban areas?

Table 2: Mean score on classification of nutritional status and academic performance from urban schools

Classification of Nutritional Status	No. of Respondents	Mean	
		BMI	Achievements
Normal weight	255	19.83	10.75
Under Weight	38	16.23	8.78
Over Weight	31	24.8	9.81
Obese	5	29.9	6.2

The total number of students of normal weight in the schools from urban areas, based on sample size used for this study was 255, with a mean from Body Mass Index of 19.83 and a mean from achievement test score of 10.75. The total number of underweight students in the schools from rural areas, based on sample size used for this study was 38, with a mean from Body Mass Index of 16.23 and a mean from achievement test score of 8.78. Also, the total number of overweight students in the schools from rural areas, based on the sample size used for this study was 31, with a mean from body mass index of 24.8, and a means from achievement test score of 9.81. The number of obese students was 5, with a mean from BMI of 29.9 and a mean from achievement test score of 6.2.

DISCUSSION OF THE RESULTS

The table 1 and 2 revealed that normal weight students have a higher mean of achievement test compared with underweight, overweight and obese students. This implies that the students that have normal weight performed better than those who did not fall into this category. This finding is supported by the findings of

Sarma, Wijesingbe & Sivanantha Weri (2013) who carried out a study on effect of nutritional status on education performance of primary school children in the plantation section of Nuwara Eliya. His findings revealed that height-for-age and weight-for-age z scores showed significant positive association with Tamail language, mathematics and overall subject average marks. The low level of educational performance in thermal language, mathematics and overall subject average was significantly higher among the underweight and stunted children than that of the normal children. The findings of Datar (2003), is also supported with this finding. His study revealed that overweight children have low math and reading test scores compared with normal weight children.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of the study, it was concluded that the different categories of nutritional status has their influences on academic performance.

The following recommendations were made based on the findings of the study:

1. Parents should provide adequate food for their household, both in quality and quantity.
2. Parents should advise their children against gluttony
3. Taking large calories of fatty and carbohydrates food should be discouraged
4. Adolescent should avoid junk foods

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