

Eating Habit and Academic Performance of Secondary School Students in Ikenne, Ogun State

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ABSTRACT: This research work was necessitated by the fact that most students in secondary schools study hard yet they do not really perform as expected and this brings about disappointments. Relevance has therefore been placed on their eating habit which may assist them attain higher academic performance. This study was carried out to examine how eating habit affect the academic performance of secondary school students in selected secondary schools in Ikenne, Ogun State, Nigeria. Simple random sampling technique was used to select 180 senior secondary school students (SS2 and SS3) in five (5) secondary schools in Ikenne, Ogun State, Nigeria. The study made use of a questionnaire tagged “Eating Habit Scale” developed by the researcher. Academic performance was measured using the first term scores of selected students in English Language and Mathematics. The data collected were analyzed using the descriptive statistics method and the linear regression and t-test analyses were employed to test the stated hypotheses at 0.05 level of significance. The findings show that eating habit significantly determined the academic performance of secondary school students in Ikenne, likewise gender. Based on the findings, it was recommended that students should ensure that they take their breakfasts before going to school and that parents as well as the school should ensure the provision of healthy meals for the students before the commencement of academic activities.

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I. INTRODUCTION

Most students in our secondary schools today are finding it difficult to concentrate and do well in their studies and because of this, academic performance is threatened. Many of the academic problem students face is fueled by lack of proper eating habit. Academic performance is measured through continuous assessments and examinations. Academic performance can be seen as a problem when students are not able to reach the short-term or long-term goals in their education. When students do not perform well in school, it can be seen to be that the students did not study hard for the examination or test and also can be caused by poor concentration in school, poor memory, poor ability to follow through topics and also poor coordination in class.

Academic performance refers to a student's ability to meet their short-term or long-term goals in education. Poor academic performance according to Aremu and Soka (2003) is a performance that is termed as falling below expected standard. However, poor performance of students could be traced to be the fault of the students, the teacher or even the school. The main aim of going to school is to be able to achieve great success academically like a university degree, West African School Certificate and so on. Therefore, if a student is not able to achieve anything academically during the years in school, there is a problem. Some of the problems preventing a student from achieving the desired academic performance could be lack of concentration, poor memory, poor ability to follow up, poor coordination, the student finding it hard to study, poor exercise, poor nutrition and poor eating habit (Aremu & Soka, 2003). Additionally, Morakinyo (2003) submits that the falling level of academic performance could be due to the teacher's non-use of verbal reinforcement strategy. This shows that the school itself can contribute to a student's successful or poor academic performance.

Some of the problems of academic performance can be linked to eating habit. Eating habit can be seen as the way a person eats, considered in terms of the type of food eaten, in what quantity and when (Collins English dictionary 2016). It can then be opined that poor eating habit is the way people eat, the food they eat, and when they eat them which affects their health negatively. There are some poor eating habits experienced by students almost daily including but not limited to skipping breakfast, late night eating, drinking little water, eating large quantity of food and eating during activities. For skipping of breakfast, studies show that skipping breakfast is negatively related to scholastic achievement (Burrow, Whatnall, Patterson & Hutchesson, 2017).

Water is good for the body but students tend to drink little or no water but rather take a lot of soda or soft drinks or any liquid with a lot of sugar.

Breakfast is the most important meal of the day which boosts energy level and prepares one for the tasks ahead. Skipping breakfast may lead to fatigue, sleeping in class, lack of concentration and attention and not participating actively in class activities (Burrow, Whatnall, Patterson & Hutchesson, 2017). It was observed that many students prefer soft drinks over water and this can endanger their health as well as academic performance as Schwecherl (2014) rightly pointed out that water flushes the kidney leading to less stomach ache and prevents pains in the muscles and joints.

This work is built on Abraham Maslow's Need theory. Maslow (1943) explained that the body's primary needs must be met before higher order needs. Food in terms of water, salt, macronutrients, vitamins, minerals, and temperature within the bloodstream are very essential. However, before a student's cognitive needs can be met, they must first fulfil their basic physiological needs and McLeod (2007) noted that a tired and hungry student will learn with difficulty because of inability to focus and concentrate. Due to the above, this study looked at the influence of eating habit on academic performance of secondary school students in Ikenne, Ogun State, Nigeria.

Academic Performance

Academic performance of a student include those observable and measurable behavior of that student in respect of a particular situation. It could consist of scores obtained from teacher-made test, first term examination, mid-semester test, and so on (Yusuf, 2015). Williams (2017) opine that academic performance can be measured not only with test scores but also with extracurricular activities therefore academic performance is the outcome of education, which is the extent to which a student, teacher or institution has achieved their educational goals (Annie, Howard & Mildred, 1996: Arshad, Zaidi, & Mahmood, 2015).

There are different factors which affect the student's academic performance and they include communication, learning facilities, proper guidance and family stress (Mushtaq & Khan, 2012). Mushtaq and Khan (2012) also found that student's performance is actively correlated with satisfaction with academic environment and the facilities of library, computer lab, etc as well as the guidance of teachers.

Several causes of poor academic performance in schools abound. Petengine (2016) identified slothfulness, improper timetable, inadequate study time, financial constraint, lack of study materials and broken homes as some of the factors while Hollingsworth (2009) added family and peer relationships which have both negative and positive effect on academic performance and Burrows et al (2017) found poor nutrition and eating habit as one of the factors.

Eating Habit

The term eating habit describes the reason and how people eat, which foods they eat, and with whom they eat, as well as the ways they obtain, use, store, or discard food. A common eating pattern is the three meals per day (breakfast, lunch, and dinner) with snacks between meals (Diet, 2016). Eating a healthy diet helps the brain by providing the vitamins and minerals needed to function well. Good eating habit not only promotes physical wellbeing but academic health as well (Naillon, 2007). Erickson (2006) submits that skipping breakfast drains energy and increases snacking rate while Fitday (2016) identified various injurious eating habits as food binging which is eating a large amount of food in one sitting mainly because a meal was skipped and try to compensate for it; motional eating driven by some amount of emotions to eat even when not hungry; eating during other activities like eating during reading time and eating late at night and eating before going to bed. Paula (2016) identified the long term effects of bad eating habits as regularly eating at night, consuming a lot of fast food, skipping breakfast, eating oversized portions and drinking sugary beverages. All these can contribute to weight gain that can eventually lead to obesity putting a lot of health risk on a person (Paula, 2016).

Eating Habit and Academic Performance

There are some factors that affect what people eat which have implications for students' achievement in schools. These factors may be based on cultural, individual, social, religious, economic, environmental and political influences (Naillon, 2017). Chinyoka (2014) found that good nutrition can help reduce the destructive effects of poverty on intellectual development when it is developed early in life. Eating a healthy diet can help students feel better, cope with stress, and perform better in classroom (Centre for Disease Prevention and Control, 2018). Flect (2016) argues that children afflicted by sustained poor nutrition are at greater risk for obesity, mental and emotional health problems, and a failure to thrive academically linking mental confusion and dullness to poor dieting.

Breakfast consumption has been shown to enhance academic performance by improving cognitive function such as memory and neural efficiency and school breakfast programs have been shown to reduce absenteeism and tardiness (Carroll, 2014). Ross (2010) in his studies discovered that students that ate breakfast

regularly had a reduced risk of writing, reading, and mathematics difficulties and further observed that offering students the right food choices and helping them develop positive healthy eating habits will support the optimal function of their brains.

Gender and Academic Performance

Gender can influence academic performance of students. The works of Jacobs, Lanza, Osgood, Eccles, and Wigfield (2002) and Sirin (2005) opine that girls do better in school than boys. Zembar and Blume (2011) submit that girls get higher grades and complete high schools at a higher rate than boys and that females perform better at spelling, test of literacy, writing, and general knowledge and overtime, boys begin to perform better than girls in science subjects. Linver, Davis-Kean, Eccles and Wigfield (2002) assert that gender differences in enrollment in advanced mathematics courses in high school and expectations for success in math and physics are mediated by gender differences. Nyandwi (2014) also saw that the 'power' subjects (science, mathematics and technology) attract males while subjects like languages and literature attract females. In relation to eating habit, studies have shown that girls without breakfast were significantly more disrupted in their ability to focus than boys who did not have breakfast (Lukits, 2012) while male students who ate breakfast five days per week experienced improved academic performance compared to those who did not have breakfast and with both sexes, eating breakfast everyday showed strong improvement on academic performance (Carroll, 2014).

Objective of the Study

The objective of this study is to examine how eating habit affect academic performance of secondary school students in Ikenne, Ogun State. It specifically aims to:

1. Examine the influence of eating habit on the academic performance of secondary school students in Ikenne, Ogun State.
2. Examine if gender will moderate the influence of eating habit on academic performance of secondary school students in Ikenne, Ogun State.

Research Hypothesis

The following hypothesis were tested:

1. Eating habit will not significantly influence the academic performance of secondary school students in Ikenne, Ogun State.
2. Gender will not significantly moderate the influence of eating habit on the academic performance of secondary school students in Ikenne, Ogun State.

II. METHODOLOGY

Research Design: A descriptive survey design was used to find out the relationship between the independent variable (Eating Habit) and dependent variable (Academic Performance) by describing the existing conditions.

Population/Sample Size: The population for this study comprised of all students in senior secondary school classes two and three (SS2 and SS3) in selected secondary schools in Ikenne Local Government Area, Ogun State, Nigeria. A sample of 180 senior secondary school class two and three (SS2 and SS3) were selected through simple random sampling technique.

Sampling Procedure: The researcher personally administered the instruments on the participants in their various schools after educating them on the purpose of the exercise, obtaining their informed consent, and assuring them that information volunteered by them would be treated as strictly confidential and used for the purpose of this research only.

Instruments

Eating habit scale was self-developed with the items of measurement rated on a 5-point Likert type scale which ranked responses on a scale of strongly agree (5) to strongly disagree (1). It has a reliability co-efficient of 0.785. Academic performance was assessed by collecting and analyzing the Mathematics and English Language scores of the respondent in their last term result.

Method of Data Analysis

The data obtained were analyzed using descriptive statistics of frequencies and percentages for demographic section while linear regression and t-test was used to test the hypothesis at 0.05 level of significance.

III. RESULTS AND DISCUSSIONS

Table 4.1 Demographics of Respondents: Gender Distribution

Gender	Frequency	Percentage
Male	96	53.3%
Female	84	47.7%
Total	180	100.0%

Source: Author's Computation from Field Survey

Table 4.1 show the gender distribution of respondents. 96(53.3 percent) of the respondents were male students while the remaining 84(47.7 percent) were female students. Thus, male students that participated in the survey were slightly higher than their female counterpart.

Table 4.2 Demographics of Respondents: Age Distribution

Age	Frequency	Percentage
10-15 years	57	31.7%
16-20 years	123	68.3%
Total	180	100.0%

Source: Author's Computation from Field Survey

Table 4.2 revealed the age distribution of respondents. Majority of the respondents, which constituted 123 (68.3percent), are between the ages of 16 and 20 years. The remaining 57(31.7 percent) respondents are between the ages of 10 and 15 years

Table 4.3 Demographics of Respondents: Class Distribution

Class	Frequency	Percentage
SS2	78	43.3%
SS3	102	56.7%
Total	180	100.0%

Source: Author's Computation from Field Survey

Table 4.3 revealed the class distribution of respondents. 78(43.3 percent) respondents are in SS2 and the remaining 102 respondents, which constituted 56.7 percent are in SS3.

Table 4.4: Academic Performance (1st Terms Scores) of Respondents in English Language and Mathematics

Score	Points	English Language		Mathematics	
		No. of students	%	No. of students	%
Below 25%	1	0	0.0%	6	3.3%
26%-50%	2	78	43.3%	75	41.7%
51-75%	3	102	56.7%	90	50.0%
76%-100%	4	0	0.0%	9	5.0%
		180	100.0%	180	100.0%

Source: Author's Computation from Field Survey

Table 4.4 showed the first term scores of the respondents in English Language and Mathematics which were used to assess their academic performance. The points defined for performance ranges between 1 and 4 points. Scores below 25 percent were given 1 point; scores between 26 percent and 50 percent were given 2 points; scores between 51 percent and 75 percent were given 3 points and scores above 76 percent were scored 4 points.

It was found that none of the respondents had a score below 25 percent in English Language; 78(43.3percent) of the respondents scored between 26percent and 50percent; 102(56.7percent) of the respondents, which constituted the majority, scored between 51percent and 75percent. Also, none of the respondents had a score above 75percent.

For mathematics, 6(3.3percent) of the respondents scored below 25percent; 75(41.7percent) of the respondents scored between 26percent and 50percent; 90(50.0percent) of the respondents scored between 51percent and 75percent and 9(5.0percent) of the respondents scored above 75percent.

Table 4.5: Mean of Respondents' Academic Performance in English Language and Mathematics

Subject	English			Mathematics		
	Points (x)	Frequency (f)	Fx.	Points (x)	Frequency(f)	Fx
Below 25%	1	0	0	1	6	6
26%-50%	2	78	156	2	75	159
51%-75%	3	102	306	3	90	270
76%-100%	4	0	0	4	9	36
Total		180	462		180	471
Mean	2.57			2.62		
Performance Rate	64.3%			65.4%		

Source: Author's Computation from Field Survey

Table 4.5 presented the mean and performance rate of respondents in English Language and Mathematics. The acceptable mean point and performance rate used in the study were 2.00 and 50.0percent respectively. Thus, mean-point and performance rate above 2.00 and 50.0percent were adjudged to be “success”.

From the table, it can be seen that the mean scores of the respondents in English Language and Mathematics were 2.57 and 2.62 respectively. The performance rate of the students in both subjects stood at 64.3percent and 65.4percent. This implies that the respondents performed creditably well in both subjects, but they performed slightly better in mathematics.

4.2 Hypothesis Testing

Hypothesis 1:

H₀₁: Eating habit will not significantly influence the academic performance of students in Ikenne Local Government Area.

The first hypothesis was tested by the linear regression analysis. The dependent variable is academic performance, measured by the students' 1st term scores in English language and mathematics. Eating habit is employed by the independent variable, which is decomposed into breakfast consumption, water consumption, late-night eating and eating healthy meals.

The decision of either accepting or rejecting the hypothesis depends on the probability value of the linear regression statistics. If the probability value of the linear regression statistic is less than .05 ($p < .05$), the null hypothesis is rejected (or alternative hypothesis is accepted) that eating habit significantly influenced the academic performance of the students. Conversely, if the probability value of the regression statistic is greater than .05 ($p > .05$), the null hypothesis is accepted that eating habit did not significantly influence academic performance of the students.

Table 4.6(a): Regression Result of the Influence of Eating Habit on Students' Academic Performance

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	3.841	.451		8.523	.000
Breakfast	.010	.011	.049	.909	.009
Water	.020	.007	.144	2.717	.017
Late-Night	.021	.008	.142	2.535	.011
Healthy Meals	.005	.009	.027	.485	.002

Dependent Variable: Academic Performance

Table 4.6(b): ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	7.935	4	1.983	3.361	.001
Residual	103.254	175	.590		
Total	111.189	179			

Dependent Variable: Academic Performance

Predictors: (Constant), Break Fast, Water, Late-night eating, Healthy meals

Table 4.6(c): Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.949	.901	.872	.664820

Predictors: (Constant), Breakfast, Water, Late-night Eating, Healthy meals.

From the regression above, it can be seen that each of the components of eating habit significantly influenced academic performance, i.e. breakfast consumption ($p < .05$); water consumption ($p < .05$); late-night eating ($p < .05$) and healthy meals ($p < .05$). Eating habit explained 90.1percent of the variation in academic performance of students; this implies that eating habit has strong predictive power on academic performance. The probability of the regression statistics is less than the significance level ($p < .05$), thus the alternative hypothesis is accepted that eating habit significantly influenced the academic performance of the students.

Hypothesis 2

Table 4.7(a): Group Statistics

Gender	N	Mean	SD	Level of significance	DF	T-cal	T-tab	Sig. (2-tailed)	Decision
Male	96	3.94	.54	.05	∞	2.70	1.96	.036	Accept H ₁
Female	84	3.15	.45						

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Performance	Male	96	3.9360	.53873	.19714
	Female	84	3.1510	.44875	.24093

Table 4.7 (b): t-test Table

From the table above, it can be seen that for male students (M=3.94; SD=.54) eating habit is more significant to their academic performance as compared to their female counterparts (M=3.15, SD=.45). The t-test statistic value stood that 2.70, and was greater than the critical value of t, which stood at 1.96 at .05 significance level and infinite degrees of freedom ($2.70 > 1.96$). Furthermore, the probability value of the t-statistic is significant ($p < .05$). Thus, the alternative hypothesis is accepted that gender will moderate the influence of eating habit on the academic performance of secondary school students in Ikenne Local Government Area. This implies that there is significant difference as regard the influence of eating habit on the academic performance of male and female students.

4.3 Discussion of Findings

The major findings of the study based on hypothesis one reveals that eating habit significantly influenced the academic performance of students in Ikenne Local Government Area. This implies that the variants of eating habit in terms of breakfast consumption, water consumption, late-night eating and consumption of healthy meals have significant impact on the academic performance of students.

The results are in line with the findings of past studies. For instance, the findings conformed to that of Naillon (2017) who found that good eating habit promotes students' physical wellness and academic performance; Nyandwi (2014), who found that students who take breakfast regularly tend to perform better than their peers who do not take breakfast and Chinyoka (2014), who found that eating healthy diets strengthens students' intellectual development. Furthermore, Clarke (2006) found that consumption of breakfast meals propels improved concentration during teaching sessions. In addition Wolfe, Burkman & Streng (2000) revealed that students who ate breakfast have improved attention in late morning performance task, retrieve information more quickly and perform better in academic tasks. Other studies like Lixandru (2016) discovered that drinking enough water stimulates the nervous system and improves the functionality of the brain while Borreli (2013) indicated that late night eating affect the sleeping pattern of the students, which further translates to poor academic performance.

Hypothesis two which tested whether gender will moderate the influence of eating habit on the academic performance of students found that gender moderated the influence of eating habit on the academic performance of students. This implies that there was significant difference between how eating habit affect the academic performance of male and females. The result aligns with the discoveries of Lukits (2012) that gender differences moderate the eating habit of students which in turn affects their academic performance and that girls without breakfast were significantly more disrupted in their ability to focus than boys who did not have breakfast.

IV. CONCLUSION AND RECOMMENDATION

Based on the findings, it was concluded that eating habit significantly affects the academic performance of students and that gender moderates the influence of eating habit on the academic performance of the students. It was therefore recommended that students should ensure they take their breakfast before coming to school and ensure they eat nutritious meals with a lot of iron, vitamins, protein and minerals while reducing the consumption of fatty food, soda sweetened beverages.

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