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Influence of Nutrition Behaviour on Academic Performance of In-School Adolescents in Ibadan, Nigeria

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Abstract: Nutrition is germane to man's activities as everyone is basically a product of his/her nutrition. In-school adolescents are growing children with diverse developmental needs of which nutrition is important. Due to the overwhelming connection between nutrition and sound health and academic performance, it is important to survey the extent to which nutritional habit influence academic performance of in-school adolescents. It is in an effort to add to existing body of knowledge and explore other factors related to academic performance that this study was designed to investigate influence of nutrition behaviour on academic performance of in-school adolescents in Ibadan North Local Government Area of Oyo State.

The descriptive survey research design was used in the study with the population being in-school adolescents in Ibadan North LGA. Multi stage sampling technique was employed to select 1080 respondents from the 30 senior secondary schools in the local government area while a self developed and validated questionnaire with a reliability coefficient of 0.88 Cronbach alpha was used in generating data. Generated data were analyzed using inferential statistics of regression models and t-test at 0.05 alpha level.

The findings of the study revealed that notable nutritional behaviour significantly influenced academic performance ($F = 10.904$, R^2 Adj. $= 0.011$, $p = 0.001 < 0.05$). It was also found that male respondents engaged more in healthier nutrition behaviour compared to their female counterparts ($t_{cal} = 15.924$; $t_{crit.} = 1.96$, $p = 0.000 < 0.05$) while there was no significant gender difference in academic performance ($t_{cal} = 1.920$; $t_{crit.} = 1.96$, $p = 0.06 > 0.05$). Based on the finding of the study, it was concluded that nutrition behaviour significantly influence academic performance. School meal programme, sensitization of parents on nutritional knowledge and students on good nutrition habit for health and not for aesthetic value were recommended.

Key words: nutrition behaviour, academic performance, in-school adolescents, gender difference

1. Introduction

Academic performance has over time been established as an index of academic success and future prospects at the student level as well as a potent basis for the educational advancement of a state or region. The performance of students in public examinations for instance, speaks volume of the educational investment and success of administrations and governments. Improving academic performance is therefore one of the greatest aspirations of all stakeholders in the educational sector as it largely (although not certainly) determine the future of students.

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Improving academic performance is however dependent on identifying modifiable factors associated with it and any effort aimed at realizing this goal must be based on valid and reliable process of measuring academic performance. Naqvi and Hijazi (2006) stated that measuring of academic performance of students is challenging since it is a product of parental, socio-economic, psychological and environmental factors.

Determinants of students' academic performance have been the subject of ongoing debate among educators, academics, and policy makers. Earlier studies have established various factors associated with students' academic performance. Previous schooling, parents' education, hard work, discipline and self motivation (Nasri & Ahmed, 2006), poor instruction/teaching (Udida, Bassey, Udofia & Egbona, 2009); parental income level (Nelson, 2006; Pelino, 2007; Levin, 2007; Reeves, 2009; Barton & Coley, 2010), school culture (Cohen, McCabe, Michelli, & Pickeral, 2009; Stringaria, Zavos, Leibenluft, Maughan, & Eley, 2012; Ritz, 2014) and school attendance (Chen & Lin, 2008), gender, grade level, and socio-economic background (Alaka & Obadara, 2013) have all been found to influence academic performance. Modifying these and many other factors which affect academic performance is deemed to largely improve academic performance of students.

Due to the peculiarities of locations and social dynamics at play in different geographical areas, there is the continued need to uncover peculiar factors associated with academic performance of students. Oyo State has not had it good in the recent past in students' performance in public examinations. Adepoju and Oluchukwu (2011), reported that government's massive funding in the sector in the recent past compared to before had yet to yield fruit as academic performance of students of the state in external examinations continue to be poor. The state was rated 34 out of 36 states in Nigeria in West African Senior School Certificate Examination (WASSCE) examinations in 2011 which is a strong indication of poor academic performance among secondary school students in the state. Consequently, the government, in October that year, declared a state of emergency in the education sector.

This emergency declaration still put educational stakeholders and researchers alike on their toes on continuous search of modifiable factors that affect students' academic performance in the state. As part of this research effort, this study was designed to investigate the influence of nutrition on the academic performance of senior school students in Oyo State. Nutrition is central to health and wellbeing as man is typically reflective of his nutritional habit, simply put, man is what he eats.

Healthy eating habit during adolescence is a fundamental prerequisite for physical growth, psychosocial development and cognitive performance. Adolescence has been shown to be an important period of changes, both physiological and psychological as Gharib and Rasheed (2011) noted that during this time, changing lifestyle and dietary habits affect dietary requirements. It is expected that good nutrition is fundamental to one's performing at one's zest and school performance is not an exception. The association between poor nutrition behaviour and diet-related outcomes have been reported (Washi & Ageib, 2010; Gharib & Rasheed, 2011) and it is suspected that poor mental capacity could be a probable outcome.

Demory-Luce and Jensen (2009) reported that population-based surveys have found that adolescents often fail to meet dietary recommendations for overall nutritional status and for specific nutrient intakes and that many adolescents receive a higher proportion of energy from fat and/or added sugar and have a lower intake of vitamin A, folic acid, fiber, iron, calcium, and zinc than is recommended. The low intake of food nutrients considered to be welfare food is such suspected to reduce the mental ability of adolescents and this could impact negatively on achievement and performance. This study was therefore designed to empirically investigate and document the

influence of nutrition behaviour on the academic performance of in-school adolescents in Ibadan North LGA of Oyo State.

2. Research Objective

The objective of this study is to empirically investigate and document the influence of nutrition behaviour on the academic performance of senior secondary school students in Ibadan North LGA of Oyo State

2.1 Research Hypotheses

The study tested the following hypotheses for significance:

- Nutrition behaviour will not significantly influence academic performance of in-school adolescents in Ibadan North LGA.
- There will be no significant gender difference in nutrition behaviour of in-school adolescents in Ibadan North LGA.
- There will be no significant gender difference in academic performance of in-school adolescents in Ibadan North LGA.

3. Methodology

The descriptive survey research design was employed in this study as it is the most suitable design for the study. The population of this study consists of all in-school adolescent in public senior secondary schools in Ibadan North Local Government Area of Oyo State. The sample size for this study was 1080 adolescents drawn from SS1 and SS 2 classes in senior secondary schools in Ibadan North Local Government Area of Oyo State. A multi stage sampling technique was used in selecting this sample. The first stage involved purposive sampling technique which was used to select public senior secondary schools in the local government area. At the second stage, simple random sampling technique was used to select 18 schools from the 30 public senior secondary schools in the local government area while purposive sampling technique was also be used to pick SS 1 and 2 as classes from the 18 selected schools. At the fourth sampling stage, the first four arms (A,B,C,D) were selected from the 18 schools while respondents for the study were drawn from these arms using simple random sampling technique to pick 15 adolescents from each arm to make 60 from each school and 1080 in all.

A self-developed and validated questionnaire titled Influence of Nutrition Behaviour on Academic Performance Questionnaire with a reliability of 0.88 coefficient using the Cronbach alpha statistics was used in this study. The questionnaire has three sections with the first designed to generate demographic data, second to generate data on nutrition behaviour while the third was designed to generate data on academic performance. The completed questionnaires were collected, coded and analyzed using regression statistics and t-test at 0.05 alpha level.

4. Result

4.1 Hypothesis One

Nutrition behaviour will not significantly influence academic performance of in-school adolescents in Ibadan North LGA.

Table 1 Regression Table of Influence of Nutrition Behaviour on Academic Performance

	Sum of Squares	**df**	**Mean Square**	**F**	**R**	**R^2**	**Adjusted R^2**	**Sig.**
Regression	192.276	1	192.276	10.904	0.103	0.011	0.010	0.001
Residual	17932.862	1017	17.633					
Total	**18125.138**	**1018**						
a. Predictors: (Constant), Nutrition Habit								
b. Dependent Variable: Academic Performance								

The finding of the study as shown in the table revealed that there is significant influence of nutrition behaviour on academic performance of the respondents ($r = 0.139$, $p = 0.001 < 0.05$). The findings of the study further revealed that 1.1% (Adj. $r^2 = 0.011$) of the variance in academic performance among the respondents were accounted for by nutrition behaviour. The null hypothesis was therefore rejected.

4.2 Hypothesis Two

There will be no significant gender difference in nutrition behaviour of in-school adolescents in Ibadan North LGA.

Table 2 t-test Table of Gender Difference in Nutrition Behaviour

Variable	**Sex**	**N**	**Mean**	**Std. Dev.**	**df**	**t_{cal}**	**t_{crit}**	**p**
Nutrition Behaviour	Male	459	40.5054	3.43458	1017	15.924	1.96	0.000
	Female	554	37.2509	3.06592				

The finding of the study as shown in the t-test table indicates that there is significant gender difference in nutrition behaviour of the respondents. The calculated t value, t_{cal} is 15.924 which is greater than the critical t, $t_{crit.}$ which at df of 1017 was read off at infinity yielding 1.96. Moreover, the p value at 0.000 is also less than the 0.05 significant level thus confirming that there is significant gender difference in the nutrition behaviour of the respondents. Findings revealed that male respondents recorded a higher mean at 40.5054 thus signifying better nutrition behaviour than their female counterparts who recorded 37.2509.

4.3 Hypothesis Three

There will be no significant gender difference in academic performance of in-school adolescents in Ibadan North LGA.

Table 3 t-test Table of Gender Difference in Academic Performance

Variable	**Sex**	**N**	**Mean**	**Std. Dev.**	**df**	**t_{cal}**	**t_{crit}**	**p**
Academic Performance	Male	459	37.1983	4.57088	1017	1.92	1.96	0.06
	Female	554	36.6913	3.83338				

The finding of the study as shown in the t-test table indicates that there is no significant gender difference in academic performance of the respondents. The calculated t value, t_{cal} at 1.92 which is less than the critical t, $t_{crit.}$ at 1.96. Moreover, the p value at 0.06 is also greater than 0.05 significant level thus confirming that there is no significant gender difference in the academic performance of the respondents. Findings revealed that although male respondents recorded a higher mean at 37.1983, compared to their female counterparts' at 36.6913, the p value $0.06 > 0.05$ showed that this mean difference is not significant.

5. Discussion of Findings

The findings of the study revealed that there was a significant influence of nutrition behaviour on the academic performance of respondents. Nutrition is central to academic performance as every activity of man requires zest and energy which only good nutrition can ensure. Apart from the energy derivable from relatively cheap local food items, wellness which transcends health is made possible by consumption of food items rich in vitamins and minerals some of which might be out of reach of consumption. The findings of the study revealed that consumption of fruits and diary products is relatively low among respondents and this could impede mental capacity.

It is important that parents and care givers ensure that adolescents are provided with basic nutritional requirements that will not only boost their academic performance but also their health and well being.

The findings of the study that revealed that there is significant gender difference in nutrition behaviour cannot be unconnected with the common poor attitude to eating behaviour exhibited by girls just in the bid to maintain good posture. So many female adolescents and young people “watch their weight” and as such engage frequently in meal skipping and snacking. This could have adverse effect on their health which could also affect their academic performance. For instance, adolescent girls who have begun menstruating need extra intake of iron and other vital food nutrients to make up for the loss during their menstrual flow. When out of ignorance they subject themselves to “hunger strike” they further put their health in greater risk as outcomes of poor nutrition behaviour are well documented in literature. This finding of the study is in line with the finding of Bester and Schnell (2004) which revealed that adolescent girls do experience more stress than their male counterparts due to the physical and physiological changes and are at a greater risk of developing unhealthy nutrition behaviour.

6. Conclusion

It is concluded from the findings of the study that nutrition behaviour significantly influences academic performance of secondary school students in Ibadan North LGA. It is also concluded that while there is significant gender difference in nutrition behaviour, the same cannot be said of academic performance.

7. Recommendations

- The good old days when government cater for the nutritional needs of the school children need to be brought back as the school provides good opportunity for government to meet the nutritional needs of its young people. The school meal programme which has gone with the winds must be brought back into the school system to help meet the nutritional needs of school children as this will not only help their growth and development but also their academic performance.
- Getting parents involved through sensitization and health education on how to meet the nutritional needs of their children from the little resources they can put together as one needs basic knowledge on meal planning and not necessarily money.

It is also important to design intervention targeted at addressing poor nutrition behaviour especially among the female folks who research findings have consistently shown engage in unwholesome nutrition behaviour characterized by snacking and meal skipping.

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