

Socio-Economic Status and Gender as Determinant of Dietary Practices of Secondary School Students' by Exposure to Pictorial Nutrition Education for Sustainability

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Abstract: Objectives: The study examined socio-economic status and gender as determinant of dietary practices of senior secondary school students in Edo South Senatorial district for healthy living and sustainability. Methodology: Quasi experimental research design was employed in the study. Three research questions were raised and formulated into hypotheses, tested at 0.05 level of significance. A multistage random sampling technique was used to sample 245 students from two public schools in Oredo local government areas within Edo south senatorial district. Two (2) instruments (questionnaire and achievement test) validated and reliability of 0.64 and 0.84 reliability co-efficient were obtained. The demographic data/SES, dietary practices (DDPSEQ) was used to obtain information on their dietary practices and socio-economic status, while the pictorial nutrition achievement test (PNAT) consisted of the pre- and post-test. The treatment package comprised planned lessons of 40 minutes each for six (6) weeks. The data collected were analyzed using inferential statistics; hypotheses 1 and 2 were tested using the independent *t*-test while hypothesis 3 was tested using One-Way ANOVA statistics. Findings: The study revealed that there is no significant difference in dietary practices of students of high, medium and low socio-economic status as a result of exposure to pictorial nutrition education. There was no significant difference in dietary practices by gender. The study concluded that socio-economic status does not determine dietary practices of secondary school students for responsible living.

Key words: Socio-economic status, gender, dietary practices, adolescents and sustainability.

1. Introduction

Healthy eating is needed for the adolescent' health and wellbeing because they (adolescents) are in a stage of rapid growth and changes in body composition. Adolescence is a period of rapid growth in human development when nutritional demand is increased and dietary habit is established. This period is one of the most dynamic and complex transitions in the human lifespan. The physical, developmental and social changes that occur during adolescence can markedly affect eating habits and nutritional health.

Their rapid physical growth creates an increased demand for energy and nutrients. Total nutrient needs during this period are higher than any other time in the lifecycle, and failure to consume an adequate diet during the time can potentially affect growth and sexual maturation. Good dietary practices will enhance emotional, academic and physical health and prevent chronic illnesses in the future including obesity, heart disease, cancer and diabetes [1].

Nutrition is the science that links food to health and diseases. It includes the processes by which the human body deals with the intake of food and how the body processes the substances (nutrients) in the food consumed for growth, development and maintenance of life [2]. Adequate nutrition at this stage is the basis

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for survival and ensuring good health in adulthood. Dietary practices refer to an established habit of feeding, which could be good or bad and this is measured through dietary intake data that include information about usual daily food intake, eating pattern and usual nutrient intake, using the 24-hour recall. Good eating practices are those that encourage the consumption of a healthy and nutritious diet that provides the right amount of energy to keep body weight in the desirable range. According to Ref. [3] eating practices that supply all the nutrients required in life can be achieved through the six basic diet-planning principles which include: adequacy, balance, energy control, nutrient density, moderation and variety. Consistent poor dietary practices are a leading contributor to the development of chronic diseases. A balanced and appropriate diet during childhood and adolescence is likely to reduce the risk of overweight and obesity [4]. A positive association between dietary practices and parental socio-economic status has been established [5-7].

Socio-economic status (SES) is one of the many terms used to characterize social stratification, and it is often used synonymously with socioeconomic positions and social class. SES is postulated to be a major determinant of dietary intake and nutrition related knowledge in adult. A strong association between SES and healthy eating habits has been documented in literature [5]. Healthy eating habits are largely determined by social, economic and cultural factors. As a result, overweight and obesity have the greatest impact on the poorest people within communities and have significant long-term consequences for the society's most vulnerable groups, children and adolescents. Studies have revealed that individual from higher and medium SES demonstrates higher nutrition knowledge, habits and healthy life styles as compared to individuals from lower SES [8]. The importance of developing sustainable and healthy eating habits is obvious as this has been emphasized in the Home Economics Education curriculum, because

malnutrition at any period in the life cycle can decrease not only physical and mental developments but also increase risk for a number of immediate health problems such as iron deficiency, obesity, type 2 diabetics, eating disorder as well as impaired learning ability. Unfortunately, the diets of adolescent often fail to meet dietary recommendation both in terms of specific nutrient intake and on the level of food consumption despite their nutrition knowledge in Home Economics from the nursery, primary and secondary school levels. In spite of the fact that socio-economic status is a strong determinant of eating habit, it is still imperative to investigate if socio-economic and gender are determinant of dietary habits even when the students are exposed to pictorial nutrition education, hence this study.

1.1 Purpose of the Study

The main purpose of the study was to investigate if socio-economic status and gender are determinant of dietary practices among Senior Secondary Schools Students in Edo State by exposure to pictorial nutrition education, specifically the study determined:

- (1) Determine if there was any difference in dietary practices of students exposed to pictorial nutrition education packages and the group not exposed it;
- (2) If gender have influence on dietary practices of students exposed to pictorial nutrition education packages;
- (3) If socio-economic status have influence on dietary practices of students exposed to pictorial nutrition education packages;

1.2 Research Questions

The following research questions were raised to guide the study:

- (1) Is there a difference in dietary practices of students exposed to pictorial nutrition education packages and those not exposed to it?
- (2) Will gender influence dietary practices of students as a result of exposure to pictorial nutrition education?

(3) Will socio-economic status influence dietary practices of students as a result of exposure to pictorial nutrition education?

1.3 Hypotheses

The following hypotheses were formulated for the study and tested at 0.05 level of significance.

(1) There is no significant difference in dietary practices between students exposed to pictorial nutrition education packages and those who were not exposed to it.

(2) There is no significant difference in dietary practices of male and female students as a result of exposure to pictorial nutrition education packages.

(3) There is no significance difference in dietary practices between students of high, medium and low socio-economic status as a result of exposure to pictorial nutrition education packages.

1.4 Significance of the Study

The findings of this study will be beneficial to all stakeholders in education namely, students, health workers, nutrition educators, researchers, food and nutrition curriculum planners and policy makers.

The findings of this work will go a long way in providing useful information as regards nutrition education as a tool for improving nutrition knowledge amongst students in making better food choices. The study will be beneficial to students as it will improve their nutritional knowledge and dietary practices as a result of the intervention programme. This will help in correcting their poor dietary habits as well as help them develop lifelong eating patterns using the dietary guideline and food guide pyramid.

2. Literature Review

Socio-economic status and health are closely related thus, socio-economic status can have good effects on a person's health due to differences in ability to reach health care as well as dietary and other lifestyle choices [9]. Mathieson and Koller [7] submitted that

healthy eating habits are largely determined by social, economic and cultural factors that influence access, availability and uptake. As a result, overweight and obesity have the greatest impact on the poorest people within communities and have significant long-term consequences for the society's most vulnerable groups, children and adolescents. A poor child according to them typically has increased exposure to unhealthy home and community environment, decreased access to quality education and health services and a higher probability of a clustering of trans-generational health problems and unhealthy dietary habits. These habits are reinforced by difficulty in accessing or affording the healthiest food choices.

Adeoye and Adeoye (2009) [10] observed that fruits consumption increases with family wealth and higher parental occupational status. They reported that the pupils of parents with higher occupational status reported lower mineral drinks consumption in Northern, Southern and Western European countries, but not in Central and Eastern European countries where a significant increase in soft drink consumption with increasing family affluence was observed. Abudayya, Stigum, Shi, Abed, and Ottesen [8] in a study titled "Socio-Demographic Correlates of Food Habits among School Adolescents in North Gaza" revealed that the meal and food consumption patterns of adolescents were strongly related to socio-economic status, mothers' level of education and gender. Meal skipping was observed to be common, particularly among adolescents of low socioeconomic background and the intake of many nutritious foods such as animal food items, fruits and vegetables and foods rich in calcium seem to be low among adolescents of low socio-economic background. Food frequency consumption patterns of adolescents were closely related to socio-economic status with the poor consuming less nutritious food than the rich. According to the study, meal skipping, especially dinner was common among adolescents with low socio-economic status and that only 40%

consumed all the three daily meals. Intake of many nutritious foods such as animal food items, fruits and vegetables and foods rich in calcium was observed to be low among adolescents of low socio-economic status.

A study of 28 European countries that participated in the 2001/2002 HBSC study revealed that fruit consumption increased with family material wealth and higher parental occupational status [11]. The same study showed that pupils of parents with higher occupational status reported lower soft drink consumption in northern, southern and western European countries, but not in central and eastern European countries, where a significant increase in soft drink consumption with increasing family affluence was found. Gender has become a contemporary concern to most researchers as gender can have strong influence on nutritional knowledge and eating behavior. Studies have consistently shown superiority in nutrition knowledge of females when compared to their male counterparts. Adler [12] submitted that determinants of nutritional practices are those factors or variables responsible for adoption of the nature of food consumed. Such variables, in his view include sex, family income, environmental conditions, religious affiliation, availability of food items, knowledge of food value and cultural significance, among others. Rodger [13], in his analysis: the impact of socio-demographic and attitudes as well as dietary and health knowledge variables on dietary quality indicator with respect to gender reported that German females had better dietary knowledge than the males.

3. Methodology

3.1 Type of Research: Empirical Study

Study design: the study employed quasi experimental design because the study lacked randomization with pre- and post-test scores and the use of intact classes.

Setting: Edo South Senatorial district of Edo State,

one of the states in South region of Nigeria. There are seven (7) local Government Areas in the district: Egor, Ikpoba-Okha, Oredo, Orhionwon, Ovia South West, Ovia North East and Uhumwode.

Target Population: The population of this study consisted of all senior secondary school year one (SSI) students offering foods and nutrition (an aspect of home economics) in Edo South Senatorial district with a population of 13,318 students for the 2015/2016 academic session.

3.2 Sample and Sampling Procedure

Multistage sampling technique was employed in selecting the sample school for the study involving four stages. Simple random sampling technique was used to select intact classes within the arms for both groups. A total sample size of two hundred and forty five (245) students was used for the study (135 students for the experimental group and 110 students for the control group).

Instrumentation: Two sets of validated instruments were used for gathering data for the study. They are the demographic data, dietary practices and socio-economic questionnaire (DDPSESQ) and the pictorial nutrition achievement test (PNAT). The reliabilities of the sets of instrument (DDPSESQ and PNAT) were determined with reliabilities coefficients of 0.64 and 0.84 obtained. The questionnaire contained the demographic data questions, socio-economic status questions and dietary practices questions (food consumption, 24-hour recall). The achievement test (PNAT) comprised the pre- and post-test for both groups (experimental and control). The achievement test consisted of 30 items. Instructional package was developed for the experimental group, while the control group was taught traditionally.

Method of data collection: The study involved two senior secondary schools (co-educational schools). Two treatment techniques (usual and unusual) were involved in the study thus: pictorial nutrition

education (unusual) and traditional method (usual). The treatment package comprised planned lessons of 40 minutes each (single period) on content areas in foods and nutrition taught in sessions to both the experimental and control groups. The difference in the administration of these treatments was basically in the method of application. A pictorial nutrition education package was employed for the experimental group while the traditional method was employed for the control group.

Data Analysis: The data collected were analyzed using inferential statistics. Hypotheses 1 and 2 were tested using independent *t*-test statistics, hypotheses 3 was tested using One-Way ANOVA. The independent *t*-test was used for comparing the practices between the two groups (experimental and control), and males and females students, One-Way ANOVA was used to determine the effect of SES on dietary practices. All hypotheses were tested at 0.05 alpha level of significance. The decision rule was based on the probability value (*p*). If *p*-value rule is less than or equal to 0.05, the null hypothesis will be rejected, but if *p*-value is greater than 0.05, the null hypothesis will be retained.

4. Findings

4.1 Hypothesis One

There is no significant difference in dietary practices between students exposed to pictorial nutrition education packages and those who were not

exposed to it.

Table 1 reveals for post-test a *t*-test value of 3.573 and *p* value of 0.000. Testing at an alpha level of 0.05, the *p* value is less than the alpha level. So the null hypothesis which states that there is no significant difference in dietary practices of students exposed to pictorial nutrition education and those not exposed to it in Edo South Senatorial district, is rejected. Therefore there is a significant difference in dietary practices of students exposed to pictorial nutrition education and those not exposed to it in Edo South Senatorial district.

Since the mean of the experimental group is 33.78 and that of the control group is 31.28, it shows that experimental group achieves more dietary practice than the control.

4.2 Hypothesis Two

There is no significant difference in dietary practices of male and female students as a result of exposure to pictorial nutrition education packages

Table 2 also reveals for post test, a *t*-test value of -1.661 and a *p* value of 0.099 testing at an alpha level of 0.05. Since the *p* value is greater than the alpha level, the null hypothesis which states that there is no significant difference in dietary practices of male and female students as a result of exposure to pictorial nutrition education in Edo South Senatorial district is accepted.

Table 1 *t*-test of independent samples of dietary practices of students by exposure to pictorial nutrition education.

Group	<i>N</i>	Means	Std. dev.	<i>t</i>	Sig. (2 tailed)
Posttest experimental	135	33.78	5.66	3.573	0.000
Control	110	31.28	5.13		

$\alpha = 0.05.$

Table 2 *t*-test of independent samples of dietary practices of male and female students due to pictorial nutrition education.

	Gender	<i>N</i>	Means	Std. dev.	<i>t</i>	Sig. (2 tailed)
Posttest	Male	86	33.17	5.03	-1.661	0.099
	Female	49	34.84	6.56		
	Total	135				

$\alpha = 0.05.$

Table 3 ANOVA statistics of dietary practices of students as a result of exposure to pictorial nutrition education by socio-economic status.

		Sum of square	df	Mean square	<i>F</i>	Sig.
Pre-dietary	Between Groups	9.268	2	4.634	0.249	0.780
	Within Groups	2,456.924	132	18.613		
	Total	2,466.193	134			
Post-dietary	Between Groups	179.853	2	89.926	2.881	0.060
	Within Groups	4,120.406	132	31.215		
	Total	4,300.259	134			

$\alpha = 0.05$.

4.3 Hypothesis Three

There is no significance difference in dietary practices between students of high, medium and low socio-economic status as a result of exposure to pictorial nutrition education

Table 3 shows for pre-test an *F* value of 0.249 and a value of 0.780. This indicates no significant difference in dietary practices among students from high, medium and low socio-economic status at pre-test since the *p* value is greater than the alpha level. The table also reveals for posttest an *F* value of 2.881 and a *p* value of 0.060 testing at an alpha level of 0.05. Since the *p* value is greater than the alpha level, the hypothesis which states that there is no significant difference in dietary practices among students from high, medium and low socio-economic status as a result of exposure to pictorial nutrition education is retained.

5. Discussion of Findings

The study investigated the influence of socio-economic status and gender on dietary practices of senior secondary school students in Edo south senatorial district of Edo state by exposure to pictorial Nutrition Education. Findings show that the first hypothesis which states that there is no significant difference in dietary practices of students in the experimental and control group was rejected because there was a significant difference in dietary practices of the students in the experimental group after treatment, this corroborates the findings of Dowse and

Ehlers [14] and Mansoor and Dowse [15] who affirmed in their studies on pictorial education, that pictorial education has a large storage capacity for visual information and good retention over time that can lead to a change in behavior. Also the findings of this study are in consonance with Kelishadi et. al. [16] and Eboh & Boye [17] who found out that nutrition education programme improved dietary habits and healthy food choices. The second hypothesis revealed no significant difference in dietary practices of male and female as result of exposure to Pictorial nutrition education. This indicates that pictorial nutrition education can improve dietary practices of both male and female. This finding is in agreement with Barzegari, Ebrahimi, Azizi & Ranjbar [18], who in a study examined the nutrition knowledge attitudes and food habits of college students in Iran, and found that there was significant positive correlation between nutrition knowledge and food habits of male and female students. This finding however contradicts that of Abood, et al. [19] whose findings revealed that female student dietary practices are significantly higher than that of the males.

The finding of hypothesis three revealed that there is no significant difference in dietary practices of high, medium and low socio-economic status of students at post test. This indicates that the dietary practices of high, medium and low socio-economic class are the same thus pictorial nutrition education is effective for all levels of SES. This may be attributed to the high proliferation of eateries (junk food) and easy accessibility of such eateries to adolescent, resulting in

high consumption of junk food as a result poor nutritional knowledge. This confirms the study of Ferro-Luzzi & Puska [20] who reported in their findings that overweight and obesity tend to be highest among the low-income populations and the affluent people in developing countries. Giskes, Turrell, Patterson & Newman [21] reported that higher SES groups were more likely to consume vegetables, fruits not only in higher quantities but also in greater variety because of higher income. Findings of the study contradict these findings, claiming that there is no difference in dietary practices of high, medium and low socio-economic status.

6. Conclusion

Based on the findings of the study, it is therefore concluded that socio-economic status and gender are not determinants of good dietary practices as there was no difference in dietary practices of both male and female students and among the socio economic status at exposure to Pictorial nutrition education

7. Recommendation

Government and non-governmental agencies should provide counseling centers/services and intervention with the intention of increasing the adolescent nutritional knowledge and food eating habits for healthy living.

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