DIETARY PRACTICES AMONG IN-SCHOOL ADOLESCENTS IN ISHIELU LOCAL GOVERNMENT AREA, EBONYI STATE

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Abstract

The purpose of the study was to determine dietary practices among in-school adolescents in Ishielu LGA, Ebonyi State. Five specific objectives with five corresponding research questions and four null hypotheses guided the study. The study utilized cross-sectional survey research design. The population for the study was 9,989 In-school adolescents. A sample of 400 students was used for the study. The instruments for data collection were a 23-item "Adolescent Food Habits Questionnaire (AFHQ); and a 26-item children's Eating Attitudes Test (ChEAT). Four hundred copies each of questionnaire were administered. Means, standard deviations, frequencies and percentages were employed to analyze the data questions. T-test, One-Way Analysis of Variance (ANOVA) and Chi-square statistic was used to test the null hypotheses at .05 level of significance. Findings showed thatin-school adolescents engaged in both healthy and unhealthy dietary practices. The proportion of in-school adolescents that engaged in healthy and unhealthy dietary practices varied significantly based on gender, age, class of study and school location. There were no significant differences found in the proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on gender, school location and class of study. There was a significant difference in the proportion of in-school adolescents that engaged in healthy and unhealthy dietary practices based on age. Based on these findings, it was recommended that there is need for government, school authorities and Ebonyi State Secondary Education Board to expand and intensify nutrition education for secondary school students. They should include lessons on healthy nutrition both theory and practical aspects in the curriculum of primary, Junior Secondary and Senior Secondary schools.

Introduction

The prevalence of non-communicable diseases such as hypertension, type 2 diabetes mellitus, development of metabolic syndrome and obesity has increased among adolescents due to unhealthy dietary practices. Diet is a risk factor for major health problems World Health Organization [WHO], 2013). Unhealthy dietary

practices are also linked to global nutrition shift. Many people especially adolescents have replaced healthy foods with fast foods which mainly consist of saturated and trans-fats with low content fibres. This, dietary changes from traditional high fiber diets towards foreign fast food diet has contributed to unprecedented increase in incidence of diet-related non-communicable diseases.

Globally, the burden of non-communicable diseases has rapidly increased. Non-communicable diseases (NCDs) accounted for over 36 million deaths annually and more than nine million (25%) of these deaths occur before the age of 60 years (WHO, 2013). Tobacco consumption, high levels of cholesterol in the blood, low intake of fruit and vegetables, over weight and physical inactivity and harmful use of alcohol are among the leading factors in the increase in NCDs globally (WHO, 2013). The report further showed that consumption of energy dense nutrient-poor foods that are high in fat, sugar and salt; reduced levels of physical activity are among the determinants of non-communicable diseases and of particular concern are the increasingly unhealthy diets and reduced physical activity levels of children and adolescents. In the United State, food borne agents affect 1 out of 6 individuals and cause approximately 48 million illnesses, 128, 000 hospitalizations, and 3,000 deaths each year (Institute of Medicine of the National Academies, 2012). In 2008 an estimated 49.1 million people, including 16.7 million children experienced food security (limited availability to safe and nutritionally adequate foods) multiple times throughout the year (Nord, Mark, Andrews, Margret, Carlson and Steven, 2008). Unhealthy diet is a major risk factor for preventable morbidity, mortality and disability globally. World Health Organization (2013) estimated that 1.7 million deaths are attributed to a diet low in fruit and vegetables every year. Furthermore, about 14 per cent of gastrointestinal cancer, 11 per cent of ischemic heart disease and nine percent of stroke are caused by unhealthy diet. Thus, making it the leading preventable causes of death worldwide. In Nigeria, diet related NCDs accounted for 27 per cent of all deaths in 2008, and 42% of these deaths occur before the age of 60 years (Abisola, Olufunmilayo, Patrick & Peter, 2014). Nigeria is one of the six countries that accounts for half of all child death from malnutrition worldwide (Lorenza, 2014). The report further showed that every year, one million children under five die, 45% of them due to causes attributed to malnutrition. In Ebonyi state 3 health workers died of nutrition complicated illnesses National Centre for Disease Control (NCDC), 2018). Nutritional intake as a pivotal element contributing to human health and well-being is of great importance, and its role in childhood and adolescence is more prominent and of great concern. Unhealthy diet is a major risk factor for the burden of NCDs in sub-Saharan Africa. About 80 percent of NCD-related deaths occur in low and middle-income countries (LMICs) including nations in sub-Saharan Africa (WHO, 2010).Thus consumption of healthy diet is very crucial.

Diet has been defined variously in literature. Pollitt (2005) defined diet as what a person eats or drinks during the course of a day. Sumati (2012) defined diet as

the food that is eaten and fluids that are drank regularly. Barb and Carolyn (2016) defined diet as the food and drink a person consumes daily. Ene-Obong (2001) explained that diet is a method of feeding which provides all the essential nutrients in sufficient quantities or right proportion for a given individual. Smith (2014) opined that food items in different classes are combined into a diet and consumed according to body needs. Hsiac (2012) asserted that balanced diet is a combination of different foods which supplies all the nutrients needed by the body in right proportion for a given individual or group of individuals such as children, toddlers, infants and adolescents. Diet in this study, refers to the food adolescents eat regularly for nourishment and metabolic needs. In- school adolescents need to practice healthy eating.

Practice refers to usual pattern of action and/or established way of doing something especially one that has developed through experience and knowledge. Homby (2001) defined practice as means or a way of doing something regularly as part of one's normal behaviour. Practice is conceptualized in this study as a way of doing something that is common, habitual or repetition of an exercise as one's normal behaviour. When a practice is associated with a diet, it becomes dietary practice.

Dietary practice can be referred to as known ways of habitual consumption of diet so as to keep the body nutritionally healthy (Marija et al., 2014). Alapa (2012) defined dietary practice as a way in which individuals or group of individuals respond to social and cultural pressure to select, consume and utilize portions of valuable food supply. Abdulrahman, Zahra, Khaldoon, and Reshma (2016) asserted that dietary practice is the actual performance of an application of knowledge in order to achieve a predetermined purpose. In other words, dietary practice is a repeated customary action.

The ultimate choice of food by the consumer is a very personal one. In a situation whereby the consumer's knowledge of nutrition, food and the resources for making wise choices of healthy dietary practices are limited,it is instructive to set out guideline to aid consumers to make nutritionally advantageous choices. There are six classes of essential nutrients necessary for human survival: carbohydrates, proteins, lipids, vitamins, minerals and water (Ene-Obong, 2001). Carbohydrates are the major energy source. Along with providing fuel for physical activity, they also power the body's involuntary functions, including heartbeat, breathing and digestive processes. Food sources of carbohydrates include: grains and grain products, vegetables, fruit, legumes during products and sugars (Sumati, 2012).

One of the distinctive features of dietary practices is variety of different foods and beverages in the diet. Bamidele, Onyenike, and Olusegun (2016) stated that variety in a diet means choosing a number of different food rather than eating the same old thing day after day. Variety makes meal more interesting and helps to ensure that diet contains sufficient nutrients. Though moderating the portion or size of diet is a good practice, eating moderately also requires that one does not over consume

nutrient sources that is one sided. The more diet are made of varieties, the more consumers or people's interest will be aroused. Sumati (2012) opined that in-school adolescents are characterized by rapid growth, enormous appetite, activeness and dietary excesses. It is therefore, necessary that enough food in the right quantity and quality is provided adolescents.

There exist diverse dietary practices among adolescents. Awosan, Ibrahim, Eseiene, Yusuf, and Okolo (2014) outlined dietary practices common among adolescents to include: snacking, usually in energy dense foods, meal skipping, particularly breakfast or regular meals, wide use of fast food, low consumption of fruit and vegetables. Among rural and urban secondary school students of Ishielu Local Government Area, some of these dietary practices may also exist. Therefore, this study sought to ascertain dietary practices of in-school adolescents in the local government area.

Dietary practice in this study, refers to habitual consumption of diets by in-school adolescents to keep their body nutritionally healthy. Healthy dietary practices during adolescence is a fundamental prerequisite for physical growth, psychological development and cognitive performance. However, unhealthy dietary practices cause poorer intelligent and cognitive malfunction, behavioural achievement in school. Olusanya et al.(2002) outlined dietary practices to include: faddism (a style of food practice that people are interested in for a relatively short period); snacking (a pattern of eating events at times other than recognized meal times); macrobiotic (which means depending only on genetically modified foods, over consumption of sweetened foods); skipping of meals (omitting purposely one or more of the recognized meals and others) and vegetarianism, which means restricting eating certain foods for moral, spiritual, environmental or health reasons.

Good dietary practices among in-school adolescents may provide a means to identify interventions targeted at halting unhealthy dietary attitudes and practices, and promoting healthy dietary pattern, attitudes and practices. Mostdiet tends to be low in fruit and vegetables and calcium-rich foods and high in fat. Many factors have been identified as responsible for this trend among in-school adolescents (Mary& Jame, 2005). These factors are categorized as demographic, social, environmental or psychological. However, the present study will focus on with examining the influence of demographic factors of gender, school location, age and class of study on in-school adolescents' dietary attitudes and practices.

The in-school adolescents in Ishielu Local Government Area need healthy foods to take care of their body nutritional requirements for the maintenance of good health and wellbeing. However, it is likely that certain eating pattern, and practices may prevent them from consuming the quality and quantity of food they need for their wellbeing, with adverse nutritional outcomes such as obesity, diabetes mellitus, scurvy and pellagra, cancer, now or later in life. Hence, the study sought to investigate dietary practices among in-school adolescents in Ishielu LGA, Ebonyi State.

Statement of the Problem

Healthy diets have positive and significant effects on adolescent health and wellbeing by contributing to maintaining a healthy weight, improving physical and intellectual performance, and optimizing growth. Healthy eating habits in adolescence is likely to be maintained in adulthood. Evidence abounds on the benefits of consumption of healthy diets by adolescents. Adolescents have been encouraged to eat less food that is high in calories, fats free sugar or salt and more fruit, vegetable and dietary fibre, such as whole grains. Evidences showed that dietary quality declines from childhood to adolescence. The intake of fruit, vegetables, milk, and fruit juice decreases, whereas the intake of junk foods such as soft drinks increases during this period. There is the tendency to select and eat food that they very much like due to its flavor, popularity, cheapness or peer influence without paying attention to the nutritional value of what is being eaten. Adolescents may adopt dietary practices to imitate peers or resort to some foods because of the attitudes they hold toward specific food items. Others may eat certain foods because of prevailing dietary practices within their environment (that is, school or home).

With the increased technology in foods processing and advertisements, some adolescents appear to be indulging in consumption of processed foods as a mark of sophistication or show of affluence. Some adolescents in the area of the study have been noticed by the researcher to be consuming increased quantities of meat, animal fat, milk, sugar and beverages, such as: ice-cream, soft drink and decrease their consumption of fruit and vegetables, cereals and starch. This situation poses threats to adolescents' health and wellbeing in Ishielu, LGA, Ebonyi State.

Socioe-conomic status, demographic characteristics and diet among adolescents has received more attention in recent years. However, studies among adolescents that focus on demographic difference in dietary practices are limited. Despite pervasive dieting during the secondary school years, only a handful of studies have examined dietary practices among in-school adolescents. However, there is virtually no published study on dietary practices among in-school adolescents in Ishielu Local Government Area, Ebonyi State. Therefore, the researcher was pricked to embark on this study to investigate dietary practices among in-school adolescents in Ishielu LGA of Ebonyi State.

Purpose of the Study

The purpose of the study was to investigate dietary practices among in-school adolescents in Ishielu LGA, Ebonyi State. Specially, the study sought to ascertain:

1. proportion of in-school adolescents that engage in healthy and unhealthy dietary practices;
2. proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on gender;
3. proportion of in-school adolescents that in engage in healthy and unhealthy dietary practices based on age;
4. proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on class of study; and
5. proportion of in-school adolescents that engage in healthy and unhealthy dietary based on school location.

Research Questions

The following research questions were posed to guide the study:

1. What is the proportion of in-school adolescents that engage in healthy and unhealthy dietary practices?
2. What is the proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on gender?
3. What is the proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on age?
4. What is the proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on class of study?
5. What is the proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on school location?

Hypotheses

The following null hypotheses were postulated and tested at .05 level of significance:

1. There is no significant difference in proportion of male and female in-school adolescents that engage in healthy and unhealthy dietary practices.
2. There is no significant difference in proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on location.
3. There is no significant difference in proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on age.
4. There is no significant difference in proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on class of study.

Methods

In order to accomplish the purpose of the study, the cross-sectional survey research design was used. Mugenda and Mugenda (2003) asserted that, a cross-sectional design is applied in collecting data from numbers of a population in order to

determine the current status of that population with respect to one or more variables. Similarly, Donald et al. (2010) asserted that a cross-sectional survey study's a cross section (sample) of a population at a single point in time. This design was successfully employed by Kotecha et al. (2014) to examine adolescents' dietary pattern, food habits and preference in India. Also, Silva, Ayankogbe, and Odugbemi (2017) successfully utilized cross-sectional survey research design to assess knowledge and consumption pattern of fruit and vegetables among junior secondary school students in Obele Community Surulere, Lagos State, Nigeria. Therefore, the design was considered appropriate for the study.

The study was carried out in Ishielu Local Government Area (LGA), Ebonyi State. Ishielu Local Government Area lies some few kilometers away from Abakaliki, the state capital, share boundaries with Nkanu East of Enugu state and Ohaukwu and Onicha Local Government area both of Ebonyi State Nigeria. The LGA is essentially inhabited by the Igbo Asaa people, Ezzagu people and Agba people. The inhabitants are mostly farmers who produce yam, rice, cassava, maize, potatoes, fruits, vegetables and groundnuts. The inhabitants also rear domestic animals, such as goats, pigs, cows, and poultry. The population for the study consisted of in-school adolescents in the 21 registered Secondary schools in Ishielu Local Government Area, Ebonyi, State. A total of 9, 989 studentsenrolled in the secondary schools in Ishielu L.G.A during 2016/2017 academic session (Ebonyi State Secondary Education Board, Planning Research & Statistics Department, 2017).

The sample size for the study consisted of 400 in-school adolescents in Ishielu LGA. The sample was determined using Taro Yamane's (1967) formula:

The sample size was increased to 400 to make provision for non-response rate and reduce cases of attrition to the barest minimum. Multistage sampling procedure was used to draw the sample for the study. The procedure for sample selection involved four stages. The first stage involved the use of cluster sampling technique to categorize the 21 schools into urban and rural schools using classification criteria for urbanicity and rurality as recommended by (United Nations, 2014).

This stage produced five urban and sixteen rural schools. The second stage involved use of simple random sampling technique of balloting to select three (3) urban secondary schools out of five (5) urban secondary schools and seven (7) rural schools out of sixteen (16) secondary schools in rural communities in Ishielu L.G.A. This phase produced a total of ten (10) schools out of twenty one (21) secondary school in Ishielu L.G.A, Ebonyi state. The third stage involved the use of purposive sampling to select JSS 1, JSS 2, SS 1, and SS 2 classes respectively from the ten (10) selected secondary schools. Junior secondary school three (JSS 3) and senior secondary three (SS 3) were excepted because they are exam classes and were fully engaged in both NECO and WAEC exams conducted by the time of the study. The fourth stage involved the use of convenience sampling to pick five (5) boys and five (5) girls in each of the four classes in the ten (10)selected secondary schools. These

stages produced a total of fourty students in each of the selected secondary schools. At the end of the sampling procedures a total of four hundred students constituted the study sample.

One standardized instrument was used for data collection in this study. The Adolescent Food Habits Questionnaire (AFHQ) developed by Johnson, Wardle, and Griffith (2002). The standardized instrument was adopted. The Adolescent Food Habits Questionnaire (AFHQ) is a 23-item instrument which measures dietary tab and fibre intake, fruit and vegetable consumption, dietary restraint, nutrition knowledge and household affluence. The items in the AFHQ were assigned a dichotomous response option of 'True' or 'false'. Respondents were expected to place a tick (√) against the option that best describes their dietary practices.

The Adolescent food habit questionnaire had an internal reliability co-efficient of 0.91 established via Crombach's Alpha. Similarly it had test retest co-efficient of 0.90 (Johnson, Wordle & Griffith, 2002).A checklist that contains information on the demographic characteristics of the in-school adolescents was attached to the AFHQ in order elicit information on demographic data. Due to the fact that standardized instruments were adopted for data collection in this study, they were not subjected to validation of any kind. Due to the fact that standardized instruments were adopted for data collection in this study, they were not subjected reliability test.

In order to gain access to the schools and the respondents, a letter of introduction obtained from the Head of Department, Human Kinetics and Health Education, University of Nigeria, Nsukka was presented to the school principals requesting for permission and co-operation to carry out a study on dietary practices among in-school adolescents in Ishielu Local Government Area. The principals of the selected schools introduced the researcher to the class teachers and students for assistance and co-operation in administering the questionnaire. The researcher used Direct Delivery System (DDS) whereby the researcher and the class teachers supervised the respondents to ensure that there is no exchange of ideas when completing the questionnaire and to also ensure high return rate. Four hundred copies of the questionnaires were administered to the students to fill out, and all were collected back on the spot, indicating 100 per cent return rate.

The retrieved copies of the questionnaires were examined for completeness of information. All copies of the instruments not duly filled out were discarded. The data collected were analyzed using the Statistical Package for Social Sciences (SPSS) batch system version 21.

Chi-square statistic was used to test hypotheses one, two, three and four, which sought to examine significant differences in the dietary practices of in-school adolescents based on demographic factors of age, gender, school location and class of study. The null hypotheses were rejected if the p-values were less than 0.05 level

of significance. However, if the p-values were greater than 0.05 level of significance, the null hypotheses were not rejected.

Results

The results of the study on dietary practices among in-school adolescents in Ishielu local government area of Ebonyi State. Four hundred copies of the questionnaires were administered to the students to fill out, and all were collected back indicating 100 per cent return rate. Out of this number, five (5) copies were discarded due to lack of completeness of information. The remaining 395 copies were used for analysis.

Research question one

What is the proportion of in-school adolescents that engaged in healthy and unhealthy dietary practices? Data answering this research question are contained in Table 1.

Table 1:
Proportion of In-school Adolescents that Engage in Healthy and Unhealthy Dietary Practices (n = 395)

S/N	Items	True f (%)	False f (%)
	Healthy Dietary practices		
1	If am having lunch, away from home I often choose a low- fat option.	293 (74.2)	102(25.8)
2	I usually avoid eating fried foods	208 (52.7)	187(47.3)
3	I make sure I eat at least one serving of fruit a day.	257(65.1)	138(34.9)
4	I try to keep my overall fat intake down.	330(83.5)	65(16.5)
5	If I am buying crisps, often choose a lowfat brand	327(82.8)	68(17.2)
6	I avoid eating lots of savages and burgers	116(29.4)	279(70.6)
7	I try to keep my overall sugar intake down	265(67.1)	130(32.9)
8	I make sure I eat at least one serving of vegetable or salad a day.	301(76.2)	94(23.8)
9	If I am having a dessert at home, I try to have something low in fat.	334(84.6)	61(15.4)
10	I rarely eat takeaway meals	268(67.8)	127(32.2)
11	I try to ensure I eat plenty of fruit and vegetables	332(84.1)	63(15.9)
12	I usually eat at least one serving of vegetables (excluding potatoes) or salad with my evening meals.	285(72.2)	110(27.8)
13	When I am buying a soft drink, I usually choose a diet drink	232(58.7)	163(41.3)

14	When I put butter or margarine on bread I usually spread it thinly.	290(73.4)	105(26.6)
15	When I have a snack between meals, I often choose fruit	289(73.2)	106(26.8)
16	If I am having a dessert or pudding in a restaurant, I usually choose the healthier one.	328(83.0)	67(17.0)
17	I eat at least three serving of fruit most days	233(59.0)	162(41.0
18	I generally try to have a healthy diet	291(73.7)	104(26.3)
	Cluster %	**70.1**	**29.9**
	Unhealthy Dietary Practices		
19	I usually eat a dessert or pudding if there is one available	290 (73.4)	105(26.6)
20	I often buy pastries or cakes	215(54.4)	180(45.6)
21	I often eat sweet snacks between meals	294(74.4)	101(25.6)
22	If I have a packed lunch, I usually include some chocolate and / or biscuit	227(57.5)	168(42.5)
23	I often have cream on desserts	189(47.8)	206(52.2)
	Cluster %	**61.5**	**38.5**

Key for Interpretation
0% = 49% = Unhealthy dietary practices
50 % and above = Healthy dietary practices
70 = two-third
80 and above = majority
50 = half
51 – 69 = More than half

Data in Table 1 indicate that overall, two-third of in-school adolescents (70.1%) engaged in good dietary practices. Furthermore, In the overall as shown in Table 1 more than half of in-school adolescents (61.5%) engaged in unhealthy dietary practices. This indicates that in-school adolescents engaged in both healthy and unhealthy dietary practices.

Research question two

What is the proportion of in-school adolescents that engage in healthy and unhealthy dietary practice based on gender? Data answering this research question are contained in Table 2.

Table 2:
Proportion of In-school Adolescents that engage in Healthy and Unhealthy Dietary Practices (n = 395)

S/N	Items	Gender			
		Male (n=199)		**Female (n=196)**	
		True f(%)	**False f(%)**	**True f(%)**	**False f(%)**
	Healthy Dietary Practice				
1	If I am having lunch away from home, I often choose a low- felt option	155(77.9)	44(22.1)	138(70.4)	58(29.6)
2	I usually avoid eating fried foods	103(51.8)	96(48.2)	105(53.6)	91(46.4)
3	I make sure I eat at least one serving of fruit a day.	106(53.3)	93(46.7)	151(77.0)	45(23.0)
4	I try to keep my overall fat intake down	183(92.0)	16(8.0)	147(75.0)	49(25.0)
5	If I am buying crisps, I often choose a low- fat brand	167(83.9)	32(16.1)	160(81.6)	36(18.4)
6	I avoid eating lots of sausages and burgers	34(17.1)	165(82.9)	82(41.8)	114(58.2)
7	I try to keep my overall sugar intake down.	135(67.8)	64(32.2)	130(66.2)	66(33.7)
8	I make sure I eat at least one serving vegetable or salad a day	153(76.9)	46(32.2)	148(75.5)	48(24.5)
9	If I am having a dessert at home, I try to have something low in fat	170(85.4)	29(14.6)	164(83.7)	32(16.3)
10	I rarely eat takeaway meals	133(66.8)	66(33.2)	135(68.7)	61(31.1)
11	I try to ensure I eat plenty of fruit and vegetable	168(84.4)	31(15.6)	164(83.7)	32(16.3)
12	I usually eat at least one serving of vegetable (excluding) potatoes or salad with my evening meal.	128(64.3)	71(35.7)	157(80.1)	39(19.9)
13	When I am buying a soft drink, I usually choose a diet drink.	124(62.3)	75(37.7	108(55.1)	88(44.9)
14	When I put butter or margarine on bread, I usually spread it thinly	131(65.8)	68(34.2)	159(81.1)	37(18.9)
15	When I have a snack between meals, I often choose fruit	142(71.4)	57(28.6)	147(75.0)	49(25.0)
16	If I am having a dessert or pudding in a restaurant, I usually choose the healthiest one.	164(82.4)	35(17.6)	164(83.7)	32(16.3)
17	I eat at least three servings of fruit most days.	126(63.3)	73(36.7)	107(54.6)	89(45.4)
18	I generally try to have a healthy diet.	140(70.4)	59(29.6)	151(77.0)	45(23.0)
	Cluster %	**68.7**	**31.3**	**71.3**	**28.7**
	Unhealthy dietary practice item				
19	I usually eat dessert or pudding if there is one available	147(73.9)	52(26.1)	143(73.0)	53(27.0)

20	I often buy pastries or cakes	93(46.7)	106(53.3)	122(62.3)	74(37.8)
21	I often eat sweet snacks between meals	151(75.9	48(24.1)	143(73.0)	53(27.0)
22	If I have a packed lunch, I usually include some chocolate and or biscuit	123(61.8)	76(38.2)	104(53.1)	92(46.9)
23	I often have cream on desserts	94(47.2)	105(52.8)	95(48.5)	101(51.5)
	Cluster %	**61.1**	**38.9**	**61.9**	**38.1**

Key for Interpretation
0% - 49% = Unhealthy dietary practices
50 % and above = Healthy dietary practices

Data in Table 2 showed that overall, more than two-third offemale students engaged in healthy dietary practices more than male students (female = 71.3% >male = 68.7%). The table also shows that more than half of female students engaged in unhealthy dietary practices more than the male students (female, 61.9% > male = 61.1%). This indicates that female students more than male students engaged in both healthy and unhealthy dietary practices.

Research question three.

What is the proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on age? Data answering this research question is contained in Table 3.

Table 3:
Proportion of In-school Adolescents that engage in Healthy and Unhealthy Dietary Practices Based on Age (n = 395)

		Age			
		10-14years (n=224)		**15-19years (n=171)**	
S/N	**Items**	**True f(%)**	**False f(%)**	**True f(%)**	**False f(%)**
	Healthy Dietary Practice				
1	If I am having lunch away from home, I often choose a low- felt option	165(73.7)	59(26.3)	128(74.9)	43(25.1)
2	I usually avoid eating fried foods	118(52.7)	106(47.3)	90(52.6)	81(47.4)
3	I make sure I eat at least one serving of fruit a day.	151(67.4)	73(32.6)	106(62.0)	65(38.0)
4	I try to keep my overall fat intake down	184(82.1)	40(17.9)	146(85.4)	25(14.6)
5	If I am buying crisps, I often choose a low- fat brand	206(92.0)	18(8.0)	121(70.8)	50(29.2)

6	I avoid eating lots of sausages and burgers	56(25.0)	168(75.0)	60(35.1)	111(64.9)
7	I try to keep my overall sugar intake down.	164(73.3)	60(26.8)	101(59.1)	70(40.9)
8	I make sure I eat at least one serving of vegetable or salad a day	175(78.1)	49(21.9)	126(73.7)	45(26.3)
9	If I am having a dessert at home, I try to have something low in fat	186(83.0)	38(17.0)	148(86.5)	23(13.5)
10	I rarely eat takeaway meals	143(63.8)	81(36.1)	125(73.1)	46(26.9)
11	I try to ensure I eat plenty of fruit and vegetable	143(63.8)	36(16.1)	144(84.2)	27(15.8)
12	I usually eat at least one serving of vegetable (excluding) potatoes or salad with my evening meal.	164(73.2)	54(24.1)	115(67.3)	56(32.7)
13	When I am buying a soft drink, I usually choose a diet drink.	170(75.9)	80(35.7)	88(51.5)	83(48.5)
14	When I put butter or margarine on bread, I usually spread it thinly	144(64.3)	52(23.2)	118(69.0)	53(31.0)
15	When I have a snack between meals, I often choose fruit	128(57.1)	67(29.9)	132(77.2)	39(22.8)
16	If I am having a dessert or pudding in a restaurant, I usually choose the healthiest one.	157(70.1)	44(19.6)	148(86.5)	23(13.5)
17	I eat at least three servings of fruit most days.	117(52.2)	74(33.0)	83(48.5)	88(51.5)
18	I generally try to have a healthy diet.	161(71.9)	63(28.1)	130(76.0)	41(24.0)
	Cluster %	**67.7**	**32.3**	**59.6**	**40.4**
	Unhealthy dietary Practices				
19	I usually eat dessert or pudding if there is one available	171(76.3)	53(23.7)	119(69.6)	52(30.4)
20	I often buy pastries or cakes	119(53.1)	105(46.9)	96(56.1)	75(43.9)
21	I often eat sweet snacks between meals	188(83.9)	60(26.8)	130(76.0)	41(24.0)
22	If I have a packed lunch, I usually include some chocolate and or biscuit	172(76.8)	96(42.9)	99(57.9)	72(42.1)
23	I often have cream on desserts	180(80.4)	107(47.8)	72(42.1)	99(57.9)
	Cluster %	**74.1**	**25.9**	**60.3**	**39.7**

Key for Interpretation

0% - 49% = Unhealthy dietary practices

50 % and above = Healthy dietary practices

Data in Table 3 showed that overall, students aged 10 – 14 years engaged in healthy dietary practice more than those aged 15 – 19 years (10 – 14 years= 67.7% > 15 – 19 years =59.6%). Furthermore,the table show that students aged 10 – 14 years

engaged in unhealthy dietary practices more than those aged 15 – 19 years (10 – 14 years = 74.1% > 15 – 19 years = 60.3%). This means that students aged 10 – 14 years more than those aged 15 – 19 years engaged in both healthy and unhealthy dietary practices.

Research question Four.

What is the proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on class of study? Data answering this research question is contained table 9.

Table 4.

Proportion of In-school Adolescents that Engage in Healthy and Unhealthy Dietary Practices based on class of study (n = 395)

		Class of study							
		JSS 1 (n = 100)		JSS 2 (n = 99)		SS 1 (n = 98)		SS 2 (n = 98)	
S/N	Items	True f(%)	False f(%)	True f(%)	False f(%)	True f(%)	False f(%)	True f(%)	False f(%)
	Healthy dietary practices								
1	If I am having lunch away from, I often choose a low fat option	70(70.0)	30(30.0)	70(70.7)	29(29.3)	77(78.6)	21(21.4)	76(77.6)	22(22.4)
2	I usually avoid eating pried foods	53(53.0)	47(47.0)	53(53.5)	46(53.5)	51(52.0)	47(48.0)	51(52.0)	47(48.0)
3	I make sure I eat at least one serving of fruit a day	64(64.0)	36(36.0)	64(64.6)	35(35.4)	58(59.2)	40(40.8)	71(72.4)	27(27.6)
4	I try to keep my overall fat intake down	83(64.0)	17(17.0)	79(79.8)	20(20.2)	84(85.7)	14(14.3)	84(85.7)	14(14.3)
5	If I am buying crisps, I often choose a low fat brand	84(84.0)	16(16.0)	78(78.8)	21(21.2)	79(80.6)	19(19.4)	(86(87.8)	12(12.2)
6	Avoid eating lots of sausages and burgers	21(21.0)	79(79.0)	34(34.3)	65(65.7)	30(30.6)	68(69.4)	31(31.6)	67(68.4)
7	I try to keep my overall sugar intake down	75(75.0)	25(25.0)	60(60.6)	39(39.4)	53(54.1)	45(45.9)	77(78.6)	21(21.4)
8	I make sure I eat at least one serving of vegetables or salad a day	80(80.0)	20(20.0)	73(73.7)	26(26.3)	70(71.4)	28(28.6)	78(79.6)	20(20.4)
9	If I am having a dessert at home, I try to have something low in fat	79(79.0)	21(21.0)	83(83.8)	16(16.2)	86(87.8)	12(12.2)	86(87.8)	12(12.2)
10	I rarely eat take away meals	72(52.0)	28(28.0)	68(68.7)	31(31.3)	55(56.1)	43(43.9)	73(74.5)	25(25.5)
11	I try to ensure I eat plenty of fruit and vegetables	92(92.0)	8(8.0)	75(75.8)	24(24.2)	83(84.7)	15(15.3)	82(82.7)	16(16.3)
12	I usually eat at least one serving of vegetables, (excluding	78(78.0)	22(22.0)	73(73.7)	26(26.3)	58(59.2)	40(40.8)	76(77.6)	22(22.4)

	potatoes) or salad with my evening meal.								
12	When I am buying a soft drink I usually include some chocolate and /or biscuits.	56(56.0)	44(44.0)	53(53.5)	46(46.5	56(57.1)	42(42.9)	67(68.4)	31(31.6)
13	When I put butter or margarine on bread, I usually spread it thinly	70(70.0)	30(30.0)	75(75.8)	24(24.2)	62(63.3)	36(36.7)	83(84.7)	15(15.5)
14	When I have a snack between meals, I often choose fruit.	78(78.0)	22(22.0)	65(65.7)	34(34.3(	69(70.4)	29(29.6)	77(78.6)	21(21.4)
15	If I am having a dessert or pudding in a restaurant, I usually choose the healthiest one.	83(83.0)	17(17.0)	76(76.8)	23(23.2)	82(83.7)	16(16.3)	87(88.8)	11(11.2)
16	I eat at least three serving of fruit most days	53(53.0)	47(47.0)	65(65.7)	34(34.3)	52(53.1)	46(46.9)	63(64.3)	35(20.4)
17	I generally try to have a healthy diet.	70(70.0)	30(30.0)	74(74.7)	25(25.3)	69(70.4)	29(29.6)	78(79.6)	20(20.4)
	Cluster %	**56.5**	**43.5**	**57.0**	**43.0**	**54.9**	**45.1**	**75.1**	**24.9**
	Unhealthy dietary practices items								
18	I usually eat a dessert or pudding if there is one available	79(79.0)	21(21.0)	64(64.6)	35(35.4)	68(69.4)	30(30.6)	79(80.6)	19(19.4)
19	I often buy pastries or cake	52(52.0)	48(48.0)	55(55.6)	44(44.4)	46(46.9)	52(53.1)	62(63.3)	36(36.7)
20	I often eat sweet snacks between meals	70(70.0)	30(30.0)	81(81.8)	18(18.2)	76(77.6)	22(22.4)	67(68.4)	31(31.6)
21	If I have a packed lunch, I usually include some chocolate and / or biscuits.	61(61.0)	39(39.0)	59(59.6)	40(40.4)	53(54.1)	45(45.9)	54(55.1)	44(44.9)
22	I often have cream on desserts	41(41.0)	59(59.0)	48(48.5)	51(51.5)	53(54.1)	45(45.9)	47(48.0)	51(52.0)
	Cluster %	**60.6**	**39.4**	**62.0**	**38.0**	**60.4**	**39.6**	**63.0**	**37.0**

Key for Interpretation

0% - 49% = Unhealthy dietary practices

50 % and above = Healthy dietary practices

Data in Table 4 indicate that SS 2 students more than JSS 2, JSS 1 and SS 1 students engaged in healthy dietary practices (SS 2 = 75.1% >JSS 2 = 57.0%>JSS 1 = 56.5%>SS 1 = 54.9%). The table equally shows that SS2 students engaged in unhealthy dietary practices more than those in JSS 2, JSS 1 and SS 1 (SS 2 = 63.0%>JSS 2 = 62.0% > JSS 1 = 60.6%>SS 1 = 60.4%). This implies that overall, majority of SS 2 students more than those in JSS 2, JSS1 and SS1 engaged in both healthy and unhealthy dietary practices.

Research question five.

What is the proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on school Location? Data answering this research question are contained in Table 10.

Table 5:
Proportion of In-school Adolescents that Engage in Healthy and Unhealthy Dietary Practices based on school Location (n = 395)

		School Location			
		Rural (n = 242)		Urban (n = 153)	
S/N	Items	True f(%)	False f(%)	True f (%)	False f (%)
	Healthy dietary practice				
1	If I am having lunch away from, I often choose a low fat option	179(74.0)	63(26.0)	114(75.5)	39(25.5)
2	I usually avoid eating pried foods	130(53.7)	112(46.3)	78(51.0)	75(49.0)
3	I make sure I eat at least one serving of fruit a day	152(62.8)	90(37.2)	105(68.6)	48(31.4)
4	I try to keep my overall fat intake down	208(86.0)	34(14.0)	122(79.7)	31(20.3)
5	If I am buying crisps, I often choose a low fat brand	197(81.4)	45(18.6)	130(85.0)	23(15.0)
6	Avoid eating lots of sausages and burgers	71(29.3)	171(70.7)	45(29.4)	180(70.6)
7	I try to keep my overall sugar intake down	169(69.8)	73(30.2)	96(62.7)	57(37.3)
8	I make sure I eat at least one serving of vegetables or salad a day	187(77.3)	55(22.7)	114(74.5)	39(25.5)
9	If I am having a dessert at home, I try to have something low in fat	202(83.5)	40(16.5)	132(86.3)	21(13.7)
10	I rarely eat take away meals	161(66.5)	81(33.5)	107(69.9)	40(26.1)
11	I try to ensure I eat plenty of fruit and vegetables	203(83.9)	39(16.1)	129(84.3)	24(15.7)
12	I usually eat at least one serving of vegetables, (excluding potatoes) or salad with my evening meal.	177(73.1)	65(26.9)	108(70.6)	45(29.4)

13	When I am buying a soft drink I usually include some chocolate and /or biscuits.	141(58.3)	101(41.7)	91(59.5)	62(40.5)
14	When I put butter or margarine on bread, I usually spread it thinly	177(73.1)	65(26.9)	113(73.9)	40(26.1)
15	When I have a snack between meals, I often choose fruit.	182(75.2)	60(24.8)	107(69.9)	46(30.1)
16	If I am having a dessert or pudding in a restaurant, I usually choose the healthiest one.	202(83.5)	40(16.5)	126(82.4)	27(17.6)
17	I eat at least three serving of fruit most days	140(57.9)	102(42.1)	93(60.8)	60(39.2)
18	I generally try to have a healthy diet.	176(72.7)	66(27.3)	115(75.2)	38(24.8)
	Cluster %	**70.1**	**29.9**	**69.9**	**30.1**
	Unhealthy dietary practices items				
19	I usually eat a dessert or pudding if there is one available	173(71.5)	69(28.5)	117(76.5)	36(23.5)
20	I often buy pastries or cake	123(50.8)	119(49.2)	92(60.1)	61(39.9)
21	I often eat sweet snacks between meals	181(74.8)	61(25.2)	113(73.9)	40(26.1)
22	If I have a packed lunch, I usually include some chocolate and / or biscuits.	139(57.4)	103(42.6)	88(57.5)	65(42.5)
23	I often have cream on desserts	111(45.9)	131(54.1)	78(51.0)	75(49.0)
	Cluster %	**60.1**	**39.9**	**63.8**	**36.2**

Key for Interpretation
0% - 49% = Unhealthy dietary practices
50 % and above = Healthy dietary practices

Data in Table 5 showed that overall, two – third of in-school adolescents residing in rural setting engaged in healthy dietary practices more than those residing in urban setting (rural = 70.1% > urban = 69.9%). The table equally shows that the urban students engaged in unhealthy dietary practices more than rural students (urban = 63.8% >rural = 60.1%). This indicates that overall, majority of rural students more than urban students engaged in healthy dietary practices while overall, majority

of urban students more than the rural students engaged in unhealthy dietary practices.

Hypothesis one.

There is no significant difference in the proportion of male and female in-school adolescents that engage in healthy and unhealthy dietary practices. Data testing this hypothesis are contained in Table 6.

Table 6:
Summary of Chi-square Analysis of Proportion of In-school Adolescents that Engage in Healthy and Unhealthy Dietary Practices Based on Gender

		Dietary practices				
Variable	**N**	**True O(E)**	**False O(E)**	χ^2	**df**	**p-value**
Gender						
Male	199	103(104.8)	96(94.2)			
				.130	1	.72
Female	196	105(103.2)	91(92.8)			
Total	395					

***Significant (SG) p<.05**

O = Observed frequencies; E = Expected frequencies; df = Degree of freedom

Data in Table 6 showed the results of Chi-square test for independence of no significant difference in the proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on gender. The table shows that no significant difference was found in the dietary practices of in-school adolescents based on gender (χ^2 = .130, df =1, p-value = .72> .05). Since the p-value of .72 is greater than .05 level of significance, the null hypothesis was not rejected. This implies that in-school adolescents did not differ in their dietary practices based on gender.

Hypothesis two

There is no significant differences in proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on school location. Data testing this hypothesis are contained in Table 16.

Table 7:
Summary of Chi-square Analysis of Proportion of In-school Adolescents that Engage in Healthy and Unhealthy Dietary practices Based on School Location

		Dietary practices				
Variable	**N**	**True O(E)**	**False O(E)**	χ^2	**df**	**p-value**

School Location						
Rural	242	124 (127.4)	118(114.6)			
				.504	1	.48
Urban Total	152	84(80.6)	69(72.4)			
Total	395					

***Significant (SG) p<.05**

O = Observed frequencies; E = Expected frequencies; df = Degree of freedom

Data in Table 7 showed the results of Chi-square test for independence of no significant difference based on school location. The table showed that no significant difference was found in the dietary practices of in-school adolescents based on school location (χ^2 = .504, df = 1, p-value = .48> .05). Since the p-value of .48 is greater than .05 level of significance, the null hypotheses was not rejected. This implies that in-school adolescents did not differ in their dietary practices based on school location.

Hypothesis three.

There is no significant difference in proportion of in-school adolescents that engage in healthy and unhealthy dietary practices according to age. Data testing this hypothesis are contained in Table 8.

Table 8:
Summary of chi-square Analysis of Proportion of In-school Adolescents that Engage in Healthy and Unhealthy Dietary Practices Based on Age

		Dietary practices				
Variable	**N**	**True O(E)**	**False O(E)**	χ^2	**df**	**p-value**
Age						
10 – 14 years	224	131(118.0)	93(106.0)			
				7.040	1	.01
15 – 19 years	171	77(90.0)	94(81.0)			
Total	**395**					

***Significant p< .05**

O = Observed frequencies; E = Expected frequencies; df = Degree of freedom

Data in Table 8 showed the results of Chi-square test for independence of no significant difference in the proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on age. The table shows that a significant difference existed in the dietary practices of in-school adolescents based on age (χ^2 = 7.040, df = 1, p-value = .01< .05). Since the p-value of .01 is less than .05 level of

significance, the null hypothesis was rejected. This implies that in-school adolescents' dietary practices differed based on age.

Hypothesis four.

There is no significant difference in the proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on class of study. Data testing this hypothesis are contained in Table 9.

Table 9:
Summary of Chi-square Analysis of proportion of In- School Adolescents that Engage in Healthy and Unhealthy Dietary Practices Based on Class of Study

		Dietary practices				
Variable	**N**	**True O(E)**	**False O(E)**	χ^2	**df**	**P-value**
Class of study						
JSS 1	100	52(52.7)	48(47.3)			
JSS 2	99	52(52.1)	47(46.9)			
				5.270	3	.16
SS 1	98	44(51.6)	54(46.4)			
SS 2	98	60(51.6)	38(46.4)			
Total	**395**					

***Significant p< .05**

O = Observed frequencies; E = Expected frequencies; df = Degree of freedom

Data in Table 9 showed the results of Chi-square test for independence of no significant difference in the proportion of in-school adolescents that engage in healthy and unhealthy dietary practices based on class of study (χ^2 = 5.270, df = 3, p-value = .16> .05). Since the p-value of .16 is greater than .05 level of significance, the null hypothesis was not rejected. This implies that in-school adolescents did not differ in their dietary practices based on class of study.

Discussion

Table 1 showed that overall, two-third of the in-school adolescents engaged in healthy dietary practices (70.1%). The finding was anticipated and therefore not a surprise. This is because rural and semi-urban adolescents consume mostly natural and traditional foods. The finding is in line with Ranjana, Mohomoodally and Ranasamy (2013) who reported that adolescents consume healthy food items and there has been an improvement in the eating behaviour of school adolescents

compared to rural students. The similarities in the finding could be due to intervention strategies, earlier suggested by authors and adoption of similar research design adopted. It is therefore plausible to attribute similarities in findings to research design adopted.

Findings in Table 1 also showed that few of in-school adolescents engaged in unhealthy dietary practices 29.9 %. This finding agrees with Buxton (2014) who reported that adolescents do not have healthy eating practices. They reported that adolescents usually skip breakfast and prefer high sugar and fat content food products such as snacks to natural foods. Nevertheless, the observed healthy dietary practices of the in-school adolescents in this study is quite interesting. The similarities in the findings could be attributed to the fact that some of the respondents shared some common dietary behaviour. It could therefore be adduced that the similarities in the findings of the study may be due to the subjects, characteristics.

Data in Table 2 indicate that female students more than male students engaged in healthy dietary practices. This is not surprising, because girls are closer to mothers in the home in terms of food choices and preparation. This might have influenced their dietary practices. The finding is contrary to Patricia, Freda and Laurence (2012) who reported that girls had more unhealthy eating practices than boys. The disparity in the finding could be attributed different cultural belief. In Nigeria and Ebonyi state in particular, it is believe that a woman's first office assignment is in the kitchen, and so female children are closer to mothers in the home in terms of food choices and preparation. It is therefore plausible to attribute similarities in findings to different culture belief.

Table 3 indicate that students aged 10-14 years more than those aged 15-19 years engaged in healthy dietary practices. The finding is not expected and thus a surprise. It is expected that as one carries out an action he gains experience in such a practice. It is therefore expected that students aged 15-19 years should have gained more experience in dietary practices.

Data in Table 4 revealed that overall, SS 2 students more than those in JSS2, JSS1 and SS1 engaged in healthy dietary practices. The slight difference is surprising because one would expect the senior secondary students to have a clear difference in their healthy dietary practice, owing to more exposure to health-related subjects such as Biology, Physical and Health education, Home Economics, and Agricultural science. Data in Table 5 indicated that overall, majority of rural students more than their urban counterparts engaged in healthy dietary practices. The finding is anticipated and thus not a surprise. This is because the rural students have more access to natural, traditional food more than processed sugary foods. This might likely had affected the quantities and quality of food eaten by the students.

Findings in Table 6 indicated that there were no significant differences in the mean dietary practice scores for male and female; and in their dietary practices. The finding was not expected and thus surprising. This is because what distinguishes male

from the female is all embracing hence the dietary practices cannot be left out. However, the finding is corroborated by MCnaughto, Ball, Mishra and Crawford (2008) who reported that dietary habits for males and females were similar in relation to the number of factors identified and the foods that they ate most frequently. The similarities in the findings could be due to the adoption of similar research design by the studies. It is therefore likely to attribute similarities in findings to the research design adopted by the study.

Tables 7 revealed no significant differences in the dietary practices of in-school adolescent base on school location. The finding was not expected and thus surprising. Although there is a general belief that location has little or nothing to do with students dietary practices if correct and consistent knowledge was handed down. The world has become a global village owing to technology. However, the finding disagree with Bamidele, Onyenike, and Olu, who reported that eating habits of those living in the rural areas, were significantly different from those living in urban areas, especially with respect to vegetable, snacks, and fizzy drink consumption. The disparity in the finding could be attributed to variations in geographical contexts and the adoption of different research design adopted for the study. It is therefore plausible to attribute disparities in findings to differences in setting and design.

Findings in Table 8 indicated that there was no significant difference in the mean dietary practices scores between students age 10-14 years and 15 – 19 years. whereas Table 8 indicated that there was a significant difference in the dietary practices of in-school adolescents based on age. The disparity in the finding could be attributed to differences in cultural belief and peer influence. It could therefore be adduced that the disparity in the findings of the study may be due to different cultural belief.

Tables 9 revealed that there were no significant differences in the mean dietary practices among students in JSS1, JSS 2, SS 1, and SS 2 and. The finding was not expected and thus surprising. Technology has turned the world to a global village, thus students presently have equal opportunities to access dietary knowledge irrespective of class of study. Phya, Chnan, Khairunnis, Nural and Youg (2012) indicated in their study that in-school adolescents who were more knowledgeable about healthy diet adopted positive dietary attitudes and practices. The similarities in the findings dearly illustrate that snacks consumption among adolescents is gradually on the increase. Although snacks consumption might be relatively lower among adolescents in Ebonyi State compare to their counterpart in more developed countries. It is therefore likely to attribute similarities in findings to the respondents' characteristics, location and the research design adopted.

Conclusions

The study was conducted to find out demographic difference in dietary practices among in-school adolescents in Ishielu LGA, Ebonyi State. The in-school

adolescents engaged in both healthy and unhealthy dietary practices. Dietary practices of in-school adolescents varied slightly based on gender, age, class of study and school location. There was a significant difference in the dietary practices of in-school adolescents based on age and there was no significant difference found in the dietary practices of in-school adolescents based on gender, class of study and school location. From the findings it is observed that snack consumption is gradually on the increase. Although snack consumption might be relatively lower among adolescents in Ebonyi state compare to their counterpart in more developed countries. It is plausible to attribute this behaviour to food in-security and poverty.

Recommendations

Based on the findings, discussion and conclusion of the study, the following recommendations were made:

1. There is need for government, school authorities and Ebonyi State Secondary Education Board to expand and intensify nutrition education for secondary school students. This can be achieved by increasing the number of nutrition education lesson periods per week and making it a compulsory subjects for secondary school students.
2. There is need for parents, teachers, guidance, counsellors and health educators to imbibe healthy dietary practice for adolescents to emulate.
3. School authorities and Ebonyi state secondary education board should charge vendors within and around school environment to sell more of fruits and traditional natural foods to secondary school students.
4. There is need to limit access to unhealthy foods and soft drinks sales at schools.

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