Food Habit and Nutritional Status of Adolescent Students in some selected Public Secondary Schools in Ilaro Town

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Abstract

Unhealthy eating habit among adolescents increases the risk of malnutrition. This study aims to assess the food habits and nutritional status of adolescents in selected public secondary schools in Ilaro town. Data were collected using random sampling techniques and a well-structured questionnaire. A total of 200 respondents were contacted for the study from four (4) schools. Descriptive (frequency and percentage) and inferential (Chi-square) statistics were used to summarize data. Data were analyzed using Statistical Package for Social Sciences (SPSS) VERSION 20.0. Socio-economic characteristics results showed that, majority of the respondents (51.0%) were between ages of 10-15 years. Also, 55.0% were male while 45.0% were female. Majority (59.0%) collect less than ₦50 as pocket money. Some (20.5%) were in JSS 2 while (21.5%) were in SSS 3 class. Majority of the respondents (65.5%) took breakfast. More than half (52.0%) skipped breakfast because of time. Also (55.0%) consumed vegetables twice weekly while (15.5%) consumed vegetables once weekly. Also, (37.0%) ate fruits every day while (27.0%) consumed fruits once per week. Majority of the respondents had a normal nutritional status (50.5%), (42.5%) were underweight, (3.0%) were overweight while (4.0%) were obese. The association between nutritional status and socioeconomic status indicated a significant association at ($P<0.05$). Also, the Chi-square check between nutritional status and food habit of respondents also indicated a significant association at ($P<0.05$). The Ministry of Health and Ministry of education through the (SUBEB) should carry out educative programs for parents on the need for good nutrition among adolescence.

Keywords: Adolescents, Nutritional status, Breakfast, Nutritional status, Vegetables, Fruits.

Introduction

Food habits and nutritional status of secondary school students are among the major public health problems across the globe. Secondary school students are mostly adolescents who are teenagers and not young adults.

Public Secondary School children are mostly those between the ages of 10 – 19, though there may be some who are younger or older than the required age for the class. Based on WHO's definition of an adolescent, that is, a person between 10 – 19 years of age (WHO, 2003), it can be said that most of these pupils are in the range of adolescence or in their early adolescence.

People have various definitions of adolescence, to some; it is a stage of maturation between childhood and adulthood. Qlan (2011) defined adolescence as a unique period of development of physiological, psychosocial and cognitive levels all of which affect the nutritional needs of the adolescence. Generally, puberty has been linked to teenagers and the onset of adolescent development. It is said to be a period in which rapid physical growth and psychological changes occur, climaxing in sexual maturity (Christie and Viner 2005).

Adolescents gain up to 50% of the adult weight, 50% of their adult skeletal mass and more than 20% of the adult height during this period (WHO 2006). Adolescents of both sexes and in all income and racial/ethnic groups can be at risk for dietary excesses and deficiencies. Many boys and girls in developing countries enter adolescence undernourished, making them more vulnerable to disease and early death (MONUPA, 2011). On the other hand, dietary excesses of total fat, saturated fat, cholesterol, sodium and sugar occur leading to overweight and obesity – another form of malnutrition with serious health consequences – is increasing among other young people in both low and high income countries.

During adolescence, lifestyles and food habits change which affects both nutrient needs and intake, there is also a high susceptibility to nutritional deficiencies. This is partially due to the fact that the development of eating disorders is very prominent during this time – overnight and obese children are likely to stay obese into

adulthood and more likely to develop non-communicable disease like type 2 diabetes and eating habits at this age are foundations for good health in adulthood (WHO 2011).

Unlike preschool and primary school children, most parents of secondary school children have lesser control over what they eat. In adolescent stage, less attention is paid to them as it is assumed they can take care of themselves hence most parents do not provide packed lunches like those in preschool or primary schools. Studies have shown that adolescents who have healthy eating habits are more likely to have the ability to learn normally in school and perform better academically than adolescents, who have unhealthy eating habits, (WHO 2005). It also emphasized that children who practice unhealthy eating habits become more susceptible to obesity or undernutrition in life. West and Cumines (2006) had noted that adolescence depicts period when peer pressure can affect the eating behavior and they may resort to skipping of meals or possibly under-eat or over eat. Furthermore (Shaw 1998; Olumakaiye *et al.,* 2010) had revealed problematic eating habit like skipping of meals (especially breakfast) which eventually leads to high level of snacking among this population group.

This study is therefore necessary to assess the food habits and nutritional status of selected public secondary school adolescent students in Ilaro town. Furthermore, there is no information or study on nutritional status of public secondary schools in this area, hence a need for the study. This work would further contribute to knowledge by providing information with regard to food habits and nutritional status of public school students in this area which could serve as a reference for any form of intervention program either by ministry of education, ministry of health, government or non-governmental organization.

Materials and Methods

The study was cross sectional and descriptive in nature. It involved some selected public secondary school students in Ilaro

A sum total of two hundred (200) public secondary school students were randomly selected and contacted for this work. The research was carried out using four (4) public secondary schools. They include, Itolu Community Grammar School, Ilaro, Federal polytechnic Ilaro staff secondary school, Orona High School and Yewa (Egbado) college, Ilaro. Fifty (50) respondents were randomly selected from each school.

Multi-stage sampling method was used in selecting students from various schools. A validated structured questionnaire was administered to students in the selected schools in Ilaro to capture their socio-demographic and economic characteristics as well as their food habits. They include;

Section A: Socio demographics and economic (Age, sex, religion, income (pocket money), class, family type) characteristics of respondents.

Section B: Food habits of respondents.

Section C: Anthropometry was carried out by measuring weight, height, to arrive at Body Mass Index (BMI). Body weight was measured using bathroom scales (Saca), with the subject putting very light cloths without shoes. Body weight was expressed in kilograms (kg). The bathroom scales were also calibrated before and during the study. Height/size was measured using height guage with the subject standing barefoot. Height was expressed in meters. BMI, which corresponds to the respondent's weight divided by the square of the height (kg/m^2) was calculated and used to classify underweight, normal, overweight and obese.

All the data collected were analyzed using the Statistical Package for Social Sciences (SPSS) version 20. Data from questionnaire were represented using descriptive statistics (Percentages, Frequency, mean values and standard deviation). Chi-square was used in establishing association between socio-economic status and Body Mass Index (BMI). Also, statistical significance of the p-value was set at $p<0.05$.

Results and Discussion

Table 1 shows the socio-demographic and socio-economic characteristics of the respondents. Majority of the respondents (51.0%) were between ages of 10-15 years, almost half (48.5%) were between 16-20 years while a few (0.5%) were between 21-25 years. Majority of the respondents 55.0% were male while (45.0%) were female. Majority of the respondents (68.5%) were Christians, 29.5% were Muslims while 2.0% practiced traditional religion. More than half of the respondents (53.0%) were in science class, 43.5% were in art class while (3.5%) were in commercial class. Majority (59.0%) collect less than 50 as pocket money, 22.0% collect

₦51-₦100, 15.0% collect ₦101-₦150, 1.0% collect ₦150-₦200 while 3.0% collect ₦200 as pocket money to school. Also, (20.5%) of the respondents were in JSS 2, some (15.5%) were in JSS 1, 13.5% were in JSS 3, 14.0% were in SSS 1, 15.0% were in SSS 2 while (21.5%) were in SSS 3 class. Also, 19.5% of the respondents had (1-3) family size, 50.5% were (4-6) in their family while 30.0% were above seven (7) in their family. Majority of the respondents' parents 50.0% were farmers, 1.5% were bankers, 15.0% were traders, 20.0% were civil servants while 13.5% were self-employed.

Table 1: Socio-Demographic/Economic Characteristics of Respondents

Variables	Frequency	Percentage
Age		
10-15 years	102.0	51.0
16-20 years	97.0	48.5
21-25 years	1.0	0.5
Sex		
Male	110.0	55.0
Female	90.0	45.0
Religion		
Christian	137.0	68.5
Muslim	59.0	29.5
Traditionalist	4.0	2.0
Department		
Science	106.0	53.0
Art	87.0	43.5
Commercial	7.0	3.5
Pocket money per day?		
< ₦50	118.0	59.0
₦51-₦100	44.0	22.0
₦101-₦150	30.0	15.0
₦150-₦200	2.0	1.0
>₦200	6.0	3.0
Class		
JSS 1	31.0	15.5
JSS 2	41.0	20.5
JSS 3	27.0	13.5
SSS 1	28.0	14.0
SSS 2	30.0	15.0
SSS 3	43.0	21.5
Family size		
1-3	39.0	19.5
4-6	101.0	50.5
Over 7	60.0	30.0
Parent's occupation		
Not employed	0.0	0.00
Banker	3.0	1.5
Trader	30.0	15.0
Civil servant	40.0	20.0
Farmer	100.0	50.0
Self employed	27.0	13.5

Table 2 shows information on food habit characteristics of respondents. Majority of the respondents (65.5%) took breakfast while 34.5% did not consume breakfast. More than half of the respondents (52.0%) skipped breakfast because of time, 25.0% skipped breakfast because of money, 18.5% skipped breakfast due to loss of appetite while 4.5% said they skipped breakfast as a routine. Majority of the respondents (64.5%) ate three times daily, 4.0% ate only once daily, 29.0% ate twice while 2.5% ate more than three times. Almost all (73.0%) of

the respondents did not take lunch while 27.0% took lunch. Majority of the respondents 88.0% took their lunch at home while 12.0% took their lunch at the cafeteria.

Table 2: Food Habit Characteristics of Respondents

Variables	Frequency	Percentage
Do you take breakfast?		
Yes	131.0	65.5
No	69.0	34.5
Total	200.0	100.0
Skipped breakfast?		
Yes	69.0	34.5
No	131.0	65.5
Total	200.0	100.0
Reason for skipping breakfast?		
Time	104.0	52.0
Money	50.0	25.0
Loss of appetite	37.0	18.5
Routine	9.0	4.5
Total	200.0	100.0
How many times do you eat daily?		
Once	8.0	4.0
Twice	58.0	29.0
Trice	129.0	64.5
Above three times	5.0	2.5
Total	200.0	100.0
Do you take lunch?		
Yes	54.0	27.0
No	146.0	73.0
Total	200.0	100.0
Where do you take lunch?		
Cafeteria	24.0	12.0
Home	176.0	88.0
Total	200.0	100.0

Table 3 shows information on food habit characteristics of respondents. Majority of the respondents (50.5%) consumed carbonated drinks, 10.5% consumed it every day 28.5% once a week while 11.0% consumed carbonated drinks more than three times weekly. More than half of the respondents 55.0% consumed vegetables twice per week, 29.5% consumed vegetables every day while 15.5% consumed vegetables once per week. Also, 37.0% ate fruits every day, 36.0% ate fruits twice per week while 27.0% consumed fruits once per week. Almost half 48.0% consumed dairy product every day, 24.0% consumed dairy twice per week while (28.0%) consumed dairy product once per week. Some 48.5% of the respondents ate snack every day, 39.5% ate snacks twice per week while 12.0% ate snack once per week.

Table 3: Food Habit Characteristics of Respondents

Variables	Frequency	Percentage
Carbonated drinks consumption?		
Everyday	21.0	10.5
Once a week	56.0	28.5
Thrice per week	101.0	50.5
More than three times	22.0	11.0
Total	200.0	100.0
How often do you take vegetables?		
Everyday	59.0	29.5
Twice per week	110.0	55.0
Once per week	31.0	15.5
Total	200.0	100.0
How often do you take fruits?		
Everyday	74.0	37.0
Twice per week	72.0	36.0
Once per week	54.0	27.0
Total	200.0	100.0
How often do you consume dairy product?		
Everyday	96.0	48.0
Twice per week	48.0	24.0
Once per week	56.0	28.0
Total	200.0	100.0
How often do you snack?		
Everyday	97.0	48.5
Twice per week	79.0	39.5
Once per week	24.0	12.0

Table 4 further showed information on food habit characteristics of respondents**.** Majority (77.0%) took in-between meals while 23.0% did not take in-between meals. Majority of the respondents (75.5%) snacking did not affect their next meal while snacking affected the next meal of (24.5%) of the respondents.

Table 4: Food Habit Characteristics of Respondents

Variable	Frequency	Percentage
Do you take in-between meals?		
Yes	154.0	77.0
No	46.0	23.0
Does your snacking affect next meal?		
Yes	49.0	24.5
No	151.0	75.5

Nutritional status of Respondents

Table 5 shows the nutritional status of respondents. Majority of the respondents had a normal nutritional status (50.5%), 42.5% were underweight, 3.0% were overweight while 4.0% were obese.

Table 5: Nutritional Status of Respondents

Variable	Frequency	Percentage
Underweight	85.0	42.5
Normal	101.0	50.5
Overweight	6.0	3.0
Obese	8.0	4.0
Total	200.0	100.0

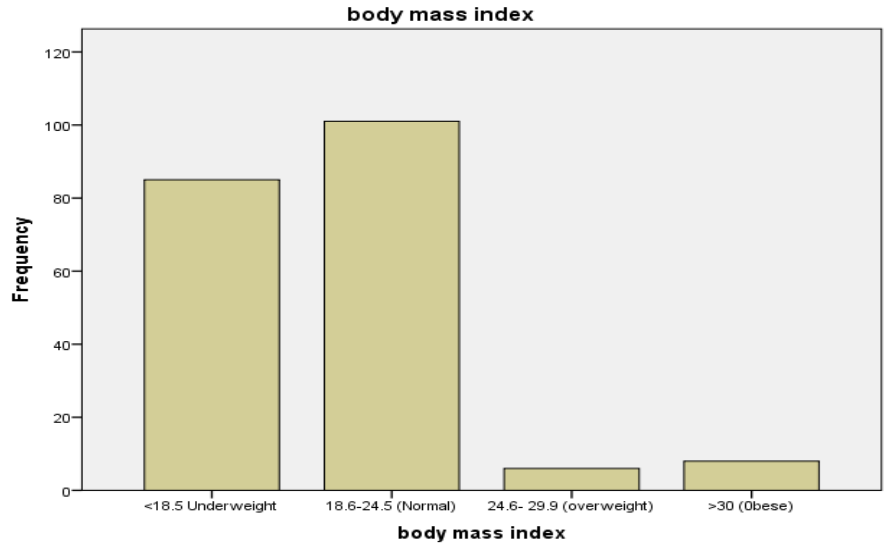

Fig. 1: Nutritional status of respondents

Association between Socio-Demographic Characteristics and Nutritional Status of the Respondents

The Table 6 shows the association between socio-demographic/economic characteristics and the nutritional status of the respondents. It reveals that there is a significant association at ($p<0.05$) between nutritional status and socio- demographic characteristics (Age, Sex, Religion, and Pocket money (Income) while there is no significant association with other variable (Class).

Table 6: Association between Socio-Demographic Characteristics and Nutritional Status of the Respondents

Variable	Body Mass Index				χ^2	p-value
	Underweight	Normal	Overweight	Obese		
Age						
10-15 years	59(29.5)	34(17.0)	1(0.5)	8(4.0)	65.63	0.000*
16-20 years	26(13.0)	67(33.5)	4(2.0)	0(0.0)		
21-25 years	0(0.0)	0(0.0)	1(0.5)	0(0.0)		
Sex						
Male	40(20.0)	65(32.5)	1(0.5)	4(2.0)	9.38	0.025*
Female	45(22.5)	36(18.0)	5(2.5)	4(2.0)		
Religion						
Christian	67(33.5)	60(30.0)	4(2.0)	6(3.0)	32.80	0.000*

Variable	Body Mass Index				χ^2	p-value
	Underweight	Normal	Overweight	Obese		
Islam	18(9.0)	39(19.5)	2(1.0)	0(0.0)		
Traditional	0(0.0)	2(1.0)	0(0.0)	2(1.0)		
Pocket Money?						
< 50	65(32.5)	50(25.0)	3(1.5)	0(0.0)	61.27	0.000*
51-100	12(6.0)	31(15.5)	1(0.5)	0(0.0)		
101-150	6(3.0)	16(8.0)	2(1.0)	6(3.0)		
151–200	2(1.0)	0(0.0)	0(0.0)	0(0.0)		
> 200	0(0.0)	4(2.0)	0(0.0)	2(1.0)		
Class						
JSS 1	16(8.0)	12(6.0)	2(1.0)	1(0.5)	14.78	0.467
JSS 2	15(7.5)	23(11.5)	0(0.0)	3(1.5)		
JSS 3	10(5.0)	17(8.5)	0(0.0)	0(0.0)		
SSS 1	16(8.0)	11(5.5)	0(0.0)	1(0.5)		
SSS 2	12(6.0)	14(7.0)	2(1.0)	2(1.0)		
SSS 3	16(8.0)	24(12.0)	2(1.0)	1(0.5)		

Statistically significant at P≤ 0.05

Association between Nutritional Status and dietary intake of the Respondents

The Table 7 shows the association between dietary intake pattern and the nutritional status of the respondents. It reveals that there is a significant association at ($p<0.05$) between nutritional status and dietary intake (Skipping meal, reasons for skipping meal and meal per day) while there is no significant association with other variable (Lunch intake).

Table 7: Association between Nutritional Status and Food Habit of the Respondents

Variable	Body Mass Index				χ^2	p-value
	Underweight	Normal	Overweight	Obese		
Do you skip breakfast?						
Yes	63(31.5)	64(32.0)	4(2.0)	0(0.0)	18.19	0.000*
No	22(11.0)	37(18.5)	2(1.0)	8(4.0)		
Reasons for skipping breakfast?						
Time	45(22.5)	54(27.0)	1(0.5)	4(2.0)	22.97	0.006*
Money	27(13.5)	19(9.5)	4(2.0)	0(0.0)		
Loss of appetite	9(4.5)	24(12.0)	0(0.0)	4(2.0)		
Routine	4(2.0)	4(2.0)	1(0.5)	0(0.0)		
How often do you eat in a day?						
Once	4(2.0)	3(1.5)	1(0.5)	0(0.0)	28.16	0.001*
Twice	23(11.5)	35(17.5)	0(0.0)	0(0.0)		
Trice	55(27.5)	63(31.5)	5(2.5)	6(3.0)		
>three times	3(1.5)	0(0.0)	0(0.0)	2(1.0)		
Do you take lunch?						
Yes	21(11.0)	33(16.5)	0(0.0)	0(0.0)	7.054	0.070
No	64(32.0)	68(34.0)	6(3.0)	8(4.0)		

Statistically significant at P≤ 0.05

Discussion

The amount of money spent daily by the respondents was very low as majority of them spent less than 50 while in school. This low spending capacity would limit their food choices while in school. A major factor that could be related to their low expenditure per day could be attributed to their parent's socioeconomic status as most of their parents were famers who may likely be low income peasant farmers who wait a very long time to harvest before they can be financially buoyant. Also the family size of majority of the respondents ranged from 4-6 which could be a major cause of financial burden to the parents as they have to cater for more children. Parents had been reported to have a high impact on adolescent food choices, however peer influence cannot be ruled out (Akman *et al*., 2010).

Majority of the respondents (64.5%) who ate three times a day could be due to general orientation of eating three times daily. Although, for those who skipped meals, breakfast had the highest number of skip. This is in line with other reports (Ree 1984; Shaw 1998; Akman *et al*., 2010; Olumakaiye 2010). The habits' of skipping breakfast could have a detrimental effect on the adolescents as breakfast performs a vital function in providing energy and nutrients after an overnight fast and can enhance concentration and performance at school.

The major reason for skipping meal in this study was no time (52.0%) which is in line with other studies (Krondi *et al.* 1983; Chapman 1992: Jenkins and Horner 2005; Olumakaiye 2010).

The frequency of food consumption results showed that all food groups that make adequate diet were well consumed by the respondents on daily basis. The consumption of vegetables (55.0%) and fruits (37.0%) by the students was very encouraging. This outcome contradicts the reports of Dewolfe and Shannon (1993); Olumakaiye (2010) that some of the young adults are aware of the underlying message that consumption of great variety of fruits and vegetable are among powerful strategies of preventing chronic disease, but ignore the fact.

The results of the nutritional status revealed that majority (50.5%) of the respondents had a normal nutritional status. This result agrees with (Agwo and Adewunmi 2020) whose findings reflected normal nutritional status of 68.5% for male diploma students in The Federal Polytechnic, Ilaro. The nutritional status was independently computed from weight and height of the respondents.

The association between nutritional status and socioeconomic status indicated a significant association at ($P<0.05$) (table 5). Also, the Chi-square check between nutritional status and food habit of respondents also indicated a significant association at ($P<0.05$). This could be as a result of formed habits when it comes to feeding by these students. This feeding habit does not depend directly on the student pocket money or income of parents, occupation, but may simply develop a habit of their own food choice and preferences.

Conclusion

Based on the findings of this study, majority of the respondents have a normal nutritional status based on body mass index (BMI). The occupation of parents and income also had an effect on the food choices of the students while in school.

Recommendations

- The Ministry of Health and Ministry of education through the (SUBEB) should carry out educative programs for parents on the need for good nutrition among adolescents and also encourage variability in diets and consumption of animal protein since parents have major influence on food choices.
- Nutrition and health education programs should also be carried out periodically in the various basic schools in the metropolis and this should be in cooperated into the educational curricula in the long round. Also nutrition officers and nutritionist within the state should formulate a framework on best approach to engage the citizens at local and community level on a need for optimal adequate nutrition.

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