

NUTRITIONAL STATUS, KNOWLEDGE AND FOOD HABIT OF FEMALE STUDENTS RESIDING IN THE FEDERAL POLYTECHNIC ILARO HOSTEL

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Abstract

Nutritional knowledge is one of the important factors for the selection and consumption of adequate diet which improve the nutritional status of an individual. The present study assessed the nutritional status, knowledge and food habit of two hundred female students selected using a multistage sampling technique from The Federal Polytechnic Ilaro. Using a semi-structured and interviewer administered questionnaire data on socio-demographic, food habit and nutritional knowledge of the respondent was obtained. Anthropometry measurement was taken, Body Mass Index (BMI) was calculated and data obtained were classified using World Health Organization (WHO) standard. Statistical package for social sciences (spss v.20.0) was used for data analysis. Majority of the students were between the age brackets of 18-21 years (64.0%), belong to Yoruba ethnic group (90.5%) and practice Christian religion (64.5%). Meal skipping was common among the respondents (58.0%) and this was attributed to their engagement in various school activities. Using BMI, more than half (69.7%) of the respondents has normal nutritional status, while 11.4% and 10.9% were under-weight and over-weight respectively. Less than half (41.0%) of the respondents has a very good knowledge of nutrition, while others were rated as good (47.0%), average (11.0%) and poor (1.0%). Significant association ($p < 0.05$) was observed between the nutritional status and some socio-demographic characteristics of the respondent and between the nutritional knowledge and some socio-demographic characteristics. In conclusion female student of the federal polytechnic Ilaro have normal BMI though few were either overweight or underweight. Poor food habit was also discovered among them. Nutritional education targeted at correcting this habit is recommended.

Key word: Nutritional status, Nutritional knowledge and Food Habit

Introduction

The youthful period mostly spent in tertiary institutions is a very critical period in an adolescent's life. During this period, they do enjoy freedom and make decisions that can affect their nutrition and overall health. Although this period is considered as the period of optimal health and growth, but evidence has shown that students in tertiary institution nowadays have poor dietary habits which may be attributed to the independence they enjoy during this period. They tend to make poor dietary choices that can cause significant health problems (Achinihu 2009). They experience numerous health-related behavioral changes, which includes adoption of unhealthy dietary habits. They do eat with consciousness of their weight, appearance and beauty and which is likely to influence their food choices (Olumakaiyeet *al.*, 2010). These adopted habits are mostly attributed to drastic changes in the environment and resources available, frequent exposure to unhealthy foods, poor food habits as well as poor nutritional knowledge among others (Haydaet *al.*, 2007).

Furthermore, during this stage, the tendency to engage in unhealthy dieting, meal skipping, and fast food consumption is also very rampant. Minimal physical activity is also a regular attitude and this poor eating habits and limited physical activity can increase the risk for osteoporosis, obesity, hyperlipidemia, diabetes, and cancer later in life (Nzeaguet *al.*, 2005). This unhealthy lifestyle has also been linked to health-related quality of life (HRQoL), which is related to an individual's nutritional status. All of these associations suggest that it is important to establish good eating habits at an early age especially among female youth.

Moreover, female undergraduate students are future mothers and caregivers to children in our nation. They have special nutrition needs due to their eminent reproductive and productive roles in the society. Poor dietary practices or food consumption pattern among this group may lead to negative impact on their nutritional status predisposing

them to future poor maternal health. Even though many college-aged students are aware of the importance of meeting nutritional values, their knowledge and attitude might hinder them from changing their behavior (Achinihu, 2009). Thus Assessment of their nutritional status, food consumption pattern and their nutritional knowledge will play a key role in promoting their nutritional status and enhancing positive attitudes with focus to influence healthy dietary habits and consequently improved nutritional and health status. Also, burden of lifestyle diseases among young adults caused by risk factors such as overweight, obesity and physical inactivity can be reduced by raising knowledge levels on accurate nutrition information that focus on dietary behavior change.

MATERIALS AND METHOD

The study area

The study was conducted in Ilaro town; the capital of Yewa South Local Government, Ogun state, Nigeria. Ilaro town is about 50 km from Abeokuta, the Ogun State capital and about 100 km from Ikeja, the capital city of Lagos State. Ilaro is situated on the rich cocoa belt of South Western region of Nigeria and endowed naturally with an expanse of land measuring about 168,750 hectares and a population of 168,850 according to the 2006 provisional census. The inhabitants of Yewa South are mainly Yoruba speaking with various dialects like Yewa, Anago, and Egun, while the three main religions are Christianity, Islam and Traditional.

Study design

The study was cross-sectional and descriptive in nature. It involves female students that reside in the Federal Polytechnic Ilaro, female hostel

Sample technique

A multi-stage sampling technique was used in selecting the sample. The Federal polytechnic was purposively selected for the study, followed by the purposive selection of all the female hostels in the institution. The Federal Polytechnic has three female hostels: Aluta, Queens’s palace, and Annex hostel. The total number of student residing in each hostel was determined, the room was numbered and the students were systematically selected from the rooms following a regular interval.

Sample size determination

The sample size was determined using the formula (Yamane, 1967)

$$n = \frac{N}{1 + N(e)^2}$$

Where n = sample size,

N = total population size (388)

e = level of precision (0.05)

$$n = \frac{388}{1 + 388(0.05^2)} = 196.5$$

The total number of one hundred and ninety seven (197) and rounded up to two hundred (200) to account for loss of questionnaire and non- responses

Table 1: Sample distribution

Hostel name	Total number of student	% (d) = $\frac{c}{\sum c} \times 100$	Sample size (n)
Aluta	236	$\frac{236}{388} \times 100 = 61$	122
Queen’s palace	96	$\frac{96}{388} \times 100 = 25$	50
Queen’s annex	56	$\frac{56}{388} \times 100 = 14$	28
Total	388	100	200

Data collection

Socio-demographic and economic characteristics of the respondents

A semi-structure and interviewer administered questionnaire was used in assessing the socio-economic and demographic characteristics of the respondent.

Nutritional status

Anthropometry measurement, i.e. height, weight was determined, Body Mass Index (BMI) was calculated and compared with the reference standard

The weight was measured with both arms by the sides and with only light cloth on. Pointer of the scale was adjusted to zero before each weighing and recorded to the nearest kilogram while a locally constructed but standardized height meter was placed behind the heels of each subject and the height was measured while standing with the head fixed against the meter. The level just above the hair was marked and recorded to the nearest meter.

Nutritional knowledge

Nutritional knowledge was assessed using twelve (12) point structured nutrition question which was scored and categorized in to poor, average, good and very good.

Pretesting of questionnaire

Before actual data collection, the questionnaire was pre-tested and validated using few respondents, modification of the tools was done based on the pretest.

Statistical analysis

The data obtained from the study was subjected to both descriptive and inferential statistic using statistical package for social science (SPSS V.20.0). Descriptive statistic such as frequency, percentage, mean and standard deviation was used while inferential statistics like chi-square was used to determine the association between the categorical variable and analysis of variance (ANOVA) was used to determine the difference between means.

RESULT

The socio demographic characteristic of the respondents as presented in the table 2 below shows that majority of the respondents (64.0%) were within the age range of 18-21 years, 34.5% fell within the ranges of 21-24, few (1.0%) of the respondents fell within the age range of 14-17 and 0.5% did not state their age. Also almost all the respondents (90.5%) were Yoruba and others were either Igbo (8.0%) or Hausa (1.0%). More than half of the respondents (64.5%) were Christians while others were Islamic (35.5%) faithful. Nearly all the respondents (98%) were single and majority of the respondents (79.0%) were from nuclear family.

Table 2: Socio demographic characteristics of the respondents

Variables	Categorization	Frequency	Percentage
Age	14-17	2	1.0
	18-21	128	64.0
	21-24	69	34.5
	No response	1	0.5
Ethnic group	Yoruba	181	90.5
	Igbo	16	8.0
	Hausa	2	1.0
	No response	1	0.5

Religion	Christianity	129	64.5
	Islam	71	35.5
Marital status	Single	196	98.0
	Married	4	2.0
Type of family	Nuclear	158	79.0
	Extended	37	18.5
	Joint family	5	2.5

Table 3 shows the socio-economic characteristics of the respondents' parents. More than one third of the respondents' fathers (39.5%) were either university or polytechnic graduates, 38% were either National certificate of Education (NCE) or National Diploma (ND) certificate holders, 18.5% had Secondary education, 3.0% primary education or only 1.0% of the respondents had no education. Also, few (1.0%) of the respondents' mothers had no formal education, 5.5% had primary education, 30.0% had Secondary education, 33.0% of them were either NCE or ND certificate holder and 30.5% were either B.Sc. or HND holder. Majority (28%) of the respondents' fathers were retirees while other engage in various trade and occupations like petty trading (12.5%), employee of private organization (5.5%), farming (3.0%), self-employed (26.5%), civil service(23.5%). The estimated monthly income of the father ranges from ₦1,000 to ₦20,000 and above. Majority of the fathers (77.5%) earned ₦20,000 and above, 15.0% earned ₦16,000-20,000, 3.5% had monthly income of ₦6000-₦10,000, 2.0% had a monthly income of ₦1000-5000 and ₦11,000-15000. Moreover, larger percentage (71.5%) of the mothers had a monthly income of ₦20,000 and above, 16.5% earned ₦16,000-20,000 monthly, 5.5% had monthly income of ₦11,000-15,000, and 3.0 and 3.5% of the mothers had monthly income of ₦1000-5000 and ₦6000-10000 respectively. Majority of the students (33.5%) had a monthly income of ₦1000-5000, 28.5% had ₦6000-10000, 18.5% of the students had a monthly income of ₦11,000-15,000, while just 11.5% had a monthly income of ₦20,000 and above, few (8.0%) had a monthly income of ₦16,000-15,000.

Table 3: Socio-economic characteristics of the respondents

Variable	Categorization	Frequency	Percentage
Educational level of the father	No education	2	1.0
	Primary education	6	3.0
	Secondary education	37	18.5
	NCE/OND	76	38.0
	HND/B.Sc.	79	39.5
Educational level of the mother	No education	2	1.0
	Primary education	11	5.5
	Secondary education	60	30.0
	NCE/OND	66	33.0
	HND/B.Sc.	61	30.5
Present occupation of the father	Retired	28	14.0
	Self employed	53	26.5
	Farming	6	3.0
	Civil service	47	23.5

	Petty trading	25	12.5
	Employee of private	11	5.5
	Personal business	35	17.5
Present occupation of	Self employed	50	25.0
	Civil service	52	26.0
	Petty trading	51	25.5
Estimated monthly			
	1000-5000	4	2.0
	6000-10000	7	3.5
	11,000-15,000	4	2.0
	16,000-20,000	30	15.0
	20,000 and above	155	77.5
Estimated monthly			
	1000-5000	6	3.0
	6000-10000	7	3.5
	11,000-15,000	11	5.5
	16,000-20,000	33	16.5
	20,000 and above	143	71.5
Estimated monthly			
	1000-5000	67	33.5
	6000-10000	57	28.5
	11,000-15,000	37	18.5
	16,000-20,000	16	8.0
	20,000 and above	23	11.5

Furthermore, in assessing the nutritional status of the respondent anthropometry measurement was taken and presented in table 5. The table reveals that the respondents within the age range of 14-17 years has a mean weight, height and Body Mass Index (BMI) of 49.00 ± 0.00 , 1.54 ± 0.00 and 20.60 ± 0.00 respectively. Also, those within the age range of 18-21 years had a mean weight of 57.70 ± 10.99 , mean height of 1.60 ± 0.00 and body mass index of 21.51 ± 3.98 respectively. While those within the age range of 21-24 years had a mean weight of 58.18 ± 15.28 , mean height of 1.63 ± 0.07 and body mass index of 22.42 ± 4.83 . There is no significant difference ($p < 0.05$) between the mean weight and age, mean height and age and the body mass index and age.

Table 4: Anthropometry measurement of the respondents

Age	Weight	Height	Body mass index
14-17	49.00 ± 0.00	1.54 ± 0.00	20.60 ± 0.00
Minimum	49.00	1.54	20.60
Maximum	49.00	1.54	20.60
Range	0.00	0.00	0.00
18-21	57.70 ± 10.99	1.60 ± 0.00	21.51 ± 3.98
Minimum	36.00	1.47	13.80
Maximum	104.00	171.00	38.00
Range	68.00	169.53	24.20
21-24	58.18 ± 15.28	1.63 ± 0.07	22.42 ± 4.83

Minimum	35.00	1.47	16.00
Maximum	109.00	1.78	37.45
Range	74.00	169.53	24.20
F	0.521	0.55	1.07
p-value	0.60	0.58	0.34

Significantly different at $p < 0.05$

Figure 1 reveals the nutritional status of the respondents as assessed by BMI. More than half (69.7%) of the respondents had normal nutritional status, 11.40% were underweight while 10.90% and 6.00% were overweight and obese.

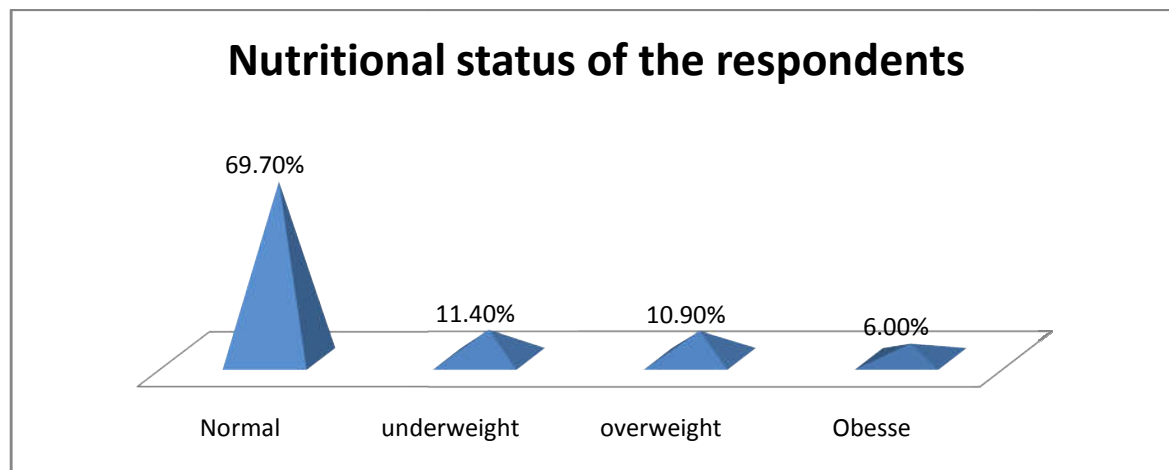


Figure 1: Nutritional status of the respondents

Moreover, the present study also assessed the food habit of the respondents. More than half (57.0%) of the respondents reported that they do eat twice a day, 41.0% do eat three time a day and very few (2.0%) of the respondents do eat once daily. Skipping of meal is common among more than half (58.0%) of the respondents and the meal usually skipped is lunch. This habit was attributed to their engagement in various school activities. Majority of the respondents (66.0%) do eat in between meals which is mostly snacks. The act of patronizing food vendors was observed among 40.0% of the respondents is lunch while others (60%) do prepare their food by themselves and the meal usually buy from the vendor is lunch. Few of the respondents (6.0%) preferred food from vendors to the one they prepare by themselves and vice-versa among 89.0% of the respondents.

Table 5: Food habit of the respondents

Variable	Categories	Frequency	Percentage
Numbers of meal consumed in a day	Once	4	2.0
	Twice	114	57.0
	Trice	82	41.0
Skipping of meals	yes	116	58.0
	No	84	42.0
Meal usually skip	Breakfast	43	21.5
	Lunch	65	32.5
	Dinner	10	5.0
	No response	5	2.5
	Not applicable	77	38.5
Reason for skipping meals	Not enough food/Busy with school activities	22	11.0

	Feel uncomfortable when I	2	1.0
	take lunch		
	School activities	69	34.5
	Don't like eating late	6	3.0
	No response	33	16.5
	Not applicable	68	34.0
	No response	7	3.5
	Not applicable	28	14.0
Do you eat in between meals			
	Yes	132	66.0
	No	68	34.0
If yes, what did you usually take			
	Fruit	12	6.0
	Snacks	124	62.0
	No response	13	6.5
	Not applicable	51	25.5
If no, why			
	Am very busy	22	11.0
	I don't eat	3	1.5
	No response	13	6.5
	Not applicable	51	25.5
Do you buy from the vendor			
	Yes	80	40.0
	No	120	60.0
If yes, how often do you buy food from the vendor			
	Everyday	4	2.0
	Frequently	25	12.5
	Occasionally	47	23.5
	No response	23	11.5
	Not applicable	101	50.5
Which meal do you usually buy from the vendor			
	Breakfast	20	10.0
	Lunch	58	29.0
	Dinner	4	2.0
	Not applicable	116	58.0
	No response	2	1.0
Do you prefer food from the vendor to your family diet			
	Yes	12	6.0
	No	178	89.0
	No response	2	1.0
	Not applicable	8	4.0

Figure 2 shows the levels of nutritional knowledge of the respondents. Less than half (41.0%) of the respondents had a very good knowledge of nutrition, while (47.0%) had a good nutritional knowledge, 11.0% are rated average and very few (1%) had poor knowledge of nutrition.

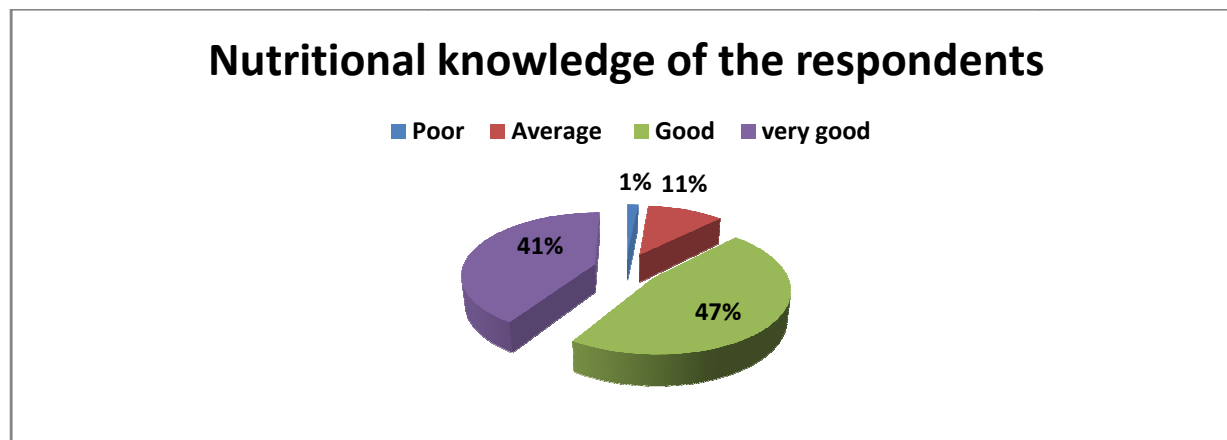


Figure 2: Levels of nutritional knowledge of the respondents

Significant association ($p < 0.05$) was observed between the nutritional status the respondents and some of their socio-demographic characteristics such as age, ethnic group, religion, family structure, present occupation of the father, present occupation of mother, and estimated monthly income of the students while no significant association ($p > 0.05$) was observed between the nutritional status and marital status of the respondents as presented on table 6.

Table 6: Association between the socio-demographic characteristics and the nutritional status of the respondents

Variable	Nutritional status of the respondents				χ^2	p-value
	Normal	Under weight	Over weight	Obese		
AGE						
14-17	0(0.0)	0(0.0)	2(1.0)	0(0.0)	18.24	0.00*
18-21	91(46.4)	16(8.2)	12(6.1)	6(3.1)		
21-24	49(25.0)	7(3.6)	7(3.6)	6(3.1)		
ETHNIC GROUP						
Yoruba	130(66.3)	20(10.2)	16(8.2)	12(6.1)	13.64	0.03*
Igbo	8(4.1)	2(1.0)	6(3.1)	0(0.0)		
Hausa	2(1.0)	0(0.0)	0(0.0)	0(0.0)		
RELIGION						
Christian	84(42.6)	10(5.1)	20(10.2)	12(6.1)	18.83	0.00*
Islam	56(28.4)	13(6.6)	2(1.0)	0(0.0)		
FAMILY STRUCTURE						
Monogamy	112(56.9)	15(7.6)	20(10.0)	12(6.10)	7.92	0.04*
Polygamy	28(14.2)	8(4.1)	2(1.0)	0(0.0)		
MARITAL STATUS						
Single	136(69.0)	23(11.7)	22(11.2)	12(6.1)	1.66	0.64
Married	4(2.0)	0(0.0)	0(0.0)	0(0.0)		
PRESENT OCCUPATION OF THE FATHER						
Retired	24(12.2)	4(2.0)	0(0.0)	0(0.0)	63.48	0.00*
Self employed	35(17.8)	6(3.0)	10(5.1)	2(1.0)		
Farming	6(3.0)	0(0.0)	0(0.0)	0(0.0)		
Civil service	25(12.7)	11(5.6)	6(3.0)	2(1.0)		

Petty trading	22(11.2)	0(0.0)	0(0.0)	2(1.0)
Employee Of private organization	9(4.6)	0(0.0)	2(1.0)	0(0.0)
Personal business	19(9.6)	2(1.0)	4(2.0)	3(1.5)
Can no longer work for money	0(0.0)	0(0.0)	0(0.0)	2(1.0)

*significant at $p < 0.05$, figure in the parentheses denote percentage

Table 6: Association between the socio-demographic characteristics and the nutritional status of the respondents (Cont'd)

Variable	Nutritional status				χ^2	p-value
	Normal	Under weight	Over weight	Obese		
PRESENT OCCUPATION OF MOTHER						
Self employed	40(20.3)	0(0.0)	8(4.1)	2(1.0)	34.21	0.00*
Civil service	30(15.2)	8(4.1)	8(4.1)	7(3.6)		
Petty trading	40(20.3)	4(2.0)	4(2.0)	3(1.5)		
Employee of private organization	10(5.1)	0(0.0)	2(1.0)	0(0.0)		
Personal business	20(10.2)	11(5.6)	4(2.0)	0(0.0)		
ESTIMATED MONTHLY INCOME OF THE STUDENT						
1000-5000	50(25.4)	11(5.6)	6(3.0)	0(0.0)	39.97	0.00*
6000-10000	36(18.3)	4(2.0)	8(4.1)	6(3.0)		
11000-15000	27(13.7)	2(1.0)	8(4.1)	0(0.0)		
16000-20000	12(6.1)	4(2.0)	0(0.0)	0(0.0)		

*significant at $p < 0.05$, figure in the parentheses denote percentage

Association between nutritional knowledge and food habit of the respondents is presented on table 7. Significant association ($p < 0.05$) was observed the nutritional knowledge and food habit of the respondents like numbers of meal consumed per day, frequency of meal skipping and reasons for skipping meal. No significant association ($p > 0.05$) was observed between the nutritional knowledge of the respondent and the intake of in-between meal as well as frequency of food vendor patronage.

Table 7: Association between nutritional knowledge and food habit of the respondents

Food habit	χ^2	Df	p-value
Numbers of meal per day	15.447	6	0.02*
Frequency of meal skipping	17.811	3	0.00*
Reasons for skipping meal	40.943	15	0.00*
Intake of in-between meal	7.069	3	0.07
Frequency of food vendor patronage	14.37	12	0.27

*significant at $p < 0.05$, figure in the parentheses denote percentage

4.2 DISCUSSION

The study was aimed at assessing the Nutritional status, Nutritional knowledge and Food consumption habit of The Federal Polytechnic Ilaro, female students. Majority of the respondents' falls between age range of 18-21 years, practice Christianity religion belongs to Yoruba ethnic group and have less than ₦5,000 as their monthly allowance. Most of the respondents were also found to have a good educational background and come from an educated family; more than one-third of the respondent parent (father and mother) were either NCE/ND holder. The socio-demographic characteristic observed in this study is similar to that observed by Nzeagwuet *al.*, 2005 in a study conducted among students of Michael Okpara University Umudike on food habit and nutritional status of Nigeria undergraduates. Low socio-economic characteristic observed in this study will translate to inability to meet various needs of the female student which include food and nutritional needs and this will go a long way in affecting the health, nutritional status and learning ability of the students.

Food habit can be defined as the usual way of eating. It depends on the socio-economic status of an individual. The present study also evaluates the food habit of the female students of The Federal Polytechnic Ilaro. It was discovered that more than half of the respondents do skip meal and the meal usually skipped is lunch. Meal skipping among the respondents was attributed to student engagement or participation in various school activities and gives credence to Haydaet *al.*, 2007, Juan *et al.*, 2013 who opined that Skipping of meals is a very common practice among undergraduates. However, few of the respondents also stated that lack of adequate food or food insecurity has majorly contributed to their skipping of meal. This finding is in consonance to various studies (Olumakaiye *et al.*, 2010 Delsie *et al.*, 1999, Achinihu, 2009) in which poor eating habit like skipping of meals (especially lunch) was discovered among under-graduate which leads to higher level of snacking among this group. Also, majority of the students sometime do skipped lunch while few of them do skip breakfast and minorities do skip dinner. The food habit observed in this study will have a negative impact on the learning ability of the student and affect their concentration in class.

Majority of the respondents ate snacks in-between meals, possibly to enable them cope with the energy needs of the body as they go about their normal academic activities. The pattern also shows a high intake of snacks among them, just as observed among the university students in the South-Eastern states of Nigeria (Achinihu, 2009) as well study conducted among private university in southern Nigeria by Kingsley *et al.*, 2018. Smoking and intake of alcohol was very low among the respondents. Majority of the students do not take alcohol or smoke, however, those who take alcohol or smoke, do so occasionally or rarely. This findings is similar to that of Kingsley *et al.*, 2018. The knowledge of the health implications of alcohol consumption and smoking may be responsible for avoidance of such practices among the respondents.

The dietary pattern assessments of the undergraduate students (respondents) also indicates that majority of the students mostly prepare their food. Those who purchase their food do so in the canteen, although they seem not to be satisfied with eating out. Lunch was found to be often eaten out in the canteen while breakfast and dinner were mainly prepared by the students. Eating out in canteens is a common practice among undergraduate students (Achinihu, 2009; Haydaet *al.*, 2007). Students do spend more time outside their halls of residence during lunch periods and engage in various classroom activities.

Anthropometric measurement of the respondent was taken using a standard procedure and was compared with World Health Organization (WHO) standards. In the present study, no significant difference ($p > 0.05$) was observed between the anthropometry measurement (weight and height) with increase in age of the respondents.

Majority of the respondent have normal body mass index while few of the respondent were found to be obese. Co-existence of underweight and overweight was also observed among the respondents. The prevalence of obesity observed in this study is lower than that reported by Al-Rethaiaaet *al.*, 2010 in a study conducted in Saudi Arabia on eating habit among college students on Obesity and eating habits. In which majority of the respondents were found to be obese.

Majority of the respondent are found to have a good nutritional knowledge while few of the respondent were found to be poor and this can be attributed to the academic background or academics status of their parent as well as other factors like peer group influence, internet and socio contact with colleague. This good nutritional knowledge will

help them in achieving, preparing, attaining and consuming adequate diet and also help them to be a good future mother.

CONCLUSION

The study reveals that meal skipping is very common among the female students residing in the female hostel of The Federal Polytechnic Ilaro and the meal usually skipped is either breakfast or lunch. As indicated by Body Mass Index (BMI) of the respondents, majority of them had a normal nutritional status. However, some of them were either underweight or overweight and few were obese. Nutritional status was significantly associated with some socio-demographic characteristics. Good knowledge of nutrition which comprises of adequate diet and its importance was discovered among the student and was also significantly associated with some socio-demographic characteristics.

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