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Assessment of food preference and anthropometric indices of adolescent in Port Harcourt city, Nigeria

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Abstract
The prevalence of overweight in Nigeria is on the rise. Adolescents are prone to overweight while transiting to adulthood. The study investigated the dietary patterns and prevalence of overweight among adolescents in Port Harcourt. A multi-stage sampling procedure was adopted in selection of 100 adolescents from randomly selected secondary school in Port Harcourt. Data were collected with a structured questionnaire which elicited information on the socio-demographic and dietary pattern. Height and weight were measured and used to drive indices (body mass index). Data collected were analyzed using the computer software package. The respondents were aged 10-19 years and had high (84%) snacks and high cabric dense foods like rice (34.52%). Many (61.76%) of the respondents eat breakfast meals and about (6.67%) eat once a day. Up to 17.06 of the respondents were overweight. In conclusion, respondents' high intake of high calorie foods led to high prevalence of overweight among them. Schools should initiate health and nutrition education programmes to help students appreciate the importance of healthy dietary pattern and adverse good health and normal body mass index.

Keywords: over weight, students, adolescents, dietary patterns

1. Introduction
Nutritional needs during adolescence are increased because of the increased growth rate and changes in body composition associated with puberty. The dramatic increase in energy and nutrient requirements coincides with other factors that may affect adolescents food choices and nutrients intake and thus, nutritional status. These factors include; the quest for independence and acceptance by peers, increased mobility, greater time spent at school/work activities and preoccupation with self-image contribution to the erractic and unhealthy eating behaviours that are common during adolescence (Deavaney *et al*., 1995) Singh, *et al*., (2008) [7]. Stated that during human development, food preference begins very early before birth and like and dislike changes as we grow into adult. Food preference are important drivers of actual food choice, determining micro and macro-nutrient intakes. Poor dietary quality increase the risk of nutrition related chromic disease, obesity and associated commodities such as type two diabetes. Understanding the etiology of food preference, therefore, has important implications for policy makers and clinicians (Alfaris, *et al*., 2015) [1].
Today, anthropometry play important role in industrial design, clothing design, ergonomics and architecture, where statistical data about the distribution of the body dimensions in the population are used to optimize product changes in lifestyles, nutrition and ethnic composition of population lead to change in the distribution of body dimension (e.g. the obesity epidemic) and require regular updating of anthropometric data collection.
This study tried to identify the problems that adolescents in Port Harcourt faced due to changes in their development and choice in their food preference.

Materials and Methods
Study area and design
The study was carried out in Port Harcourt city, the capital of Rivers State, Nigeria. The study used a cross-sectional survey design. The study population comprised adolescents from randomly selected secondary schools in Port Harcourt, namely, international secondary, Uniport International Secondary School and Community Secondary school. Multi-stage sampling technique was used to obtain sample size of 100 used for the study.

Data Collection
A structured and validated interviewee administered questionnaire was used to collect information on demographic characteristics and food consumption patterns of the respondents.

Anthropometric Measurements
Standard procedures for authorpometric measurements (height and weight) were carried out on the respondents. The heights of respondents were measured with a micro toise height measure. The respondents were asked to stand erect without foot wears on a flat surface with feet parallel to each other. The head was held comfortable, erect with arms hanging freely by the sides. Measurements were taken to the nearest 0.1m. The weight fo the respondents was measured using a salter scale of 120kg capacity. Each participant was weighed standing erect on the scale with arms on their sides and with minimal clothing and without foot wears. The efficient of the scale was tested using items of known weight prior to each measurement. The reading were recorded to the nearest 0.1kg. The height and weight measurements of participants were used to calculated the

Participants BMI using the formula

$$BMI = \frac{Weight\ (kg)}{Height\ (m^2)} = kg/m^2$$

Data analysis

The BMI of the respondents were analyzed according to WHO (2007) [1]. Data collection were analyzed using the computer software package statistical product for service solution (version 22). Descriptive statistics were carried out on the data collected, and data were presented infrequencies and percentages.

Results

Table 1 depicts the socio-demographic characteristics of the respondents. About half (65.0%) were females, and many of the subjects (36.0%) were in the 10-13 years ago range. None of the participants were married, while 100% had up to secondary education.

Table 2 shows the food preference of the subjects. On the table, 37.24% the respondents consumed vegetables regularly, while 28.27% of them consumed fruits regularly. Most of them (22.54% consumed fruited pumpkin regularly on the part of grains and cereals consumption, rice was the regularly consume cereals, follows by millet. Banana consumption was also high among the adolescents. Most of them consumed snacks 84.0%. On the consumption of alcoholic beverages, 80.0% never consumed alcoholic beverages.

Table 1: Demographic Characteristics of the adolescents

Variables	Frequency	Percentages (%)
Age (years)		
10-13	36	36
14-16	34	34
17-19	30	30
Total	100	100
Gender		
Male	35	35
Female	65	65
Total	100	100
Educational status		

Tertiary	0	None	0	0
Total	100	Elementary	0	0
		Secondary	100	100

Table 2: Food preference of the Adolescents

Variable	Frequency	Percentage (%)
Food you prefer		
Vegetables	54	37.24
Grains and cereal	23	15.86
Fruits	41	28.27
Roots and tubers	19	13.10
Legumes	1	0.69
Nuts	7	4.84
Total	145	100
Vegetables you prefer		
Fruited pumpkin	32	22.54
Green leaf	9	6.34
Spinach	7	4.92
Cabbage	20	14.08
Water leaf	29	20.42
Tomato	27	19.01
Garder egg	18	12.6%
Total	142	100
Grains and cereals you prefer		
Rice	58	34.52
Wheat	28	16.67
Mullet	37	22.02
Oat	8	4.76
Maize	12	7.14
Golden morn	25	14.96
Total	168	100
Pawpaw	15	12.30
Pineapple	20	16.39
Apple	22	18.03
Banana	30	24.59
Sour sop	10	8.20
Orange	25	20.49
Total	122	100
Snacks you prefer		
Sweetened snacks	84	84
Unsweetened snacks	16	16
Total	100	100
Do you prefer alcoholic beverages		
Yes	20	20
No	80	80
Total	100	100

Table 3 shows the type of foods consumed by the participants whereby rice had the highest percentage (10.83%) and millet the least occurrences of 1.43%.

Table 3: Types of food consumed by adolescents

Beans	47	7.48
Rice	68	10.83
Indomie (noodles)	50	7.96
Plantain	47	7.48
Spaghetti	35	5.57
Seafoods	22	3.50
Amala	12	1.91
Fufu	33	5.26
Garri	41	6.53
Yam	48	7.64
Cocoyam	21	3.34
Wheat	18	2,89
Millet	9	1.43
Potato	30	5.73
Corn flakes	33	5.26
Coco pop	17	2.71
Golden morn	30	4.78
Akara	26	4.14
Moi-moi	26	5.57
Total	628	100

Table 4 shows the consumption pattern of adolescents showing now often they eat in a day, and how often they eat Breakfast and as well as how often they eat outside their home. about 53.33% at three times daily and 61.76% enjoyed breakfast daily, while 22.68% ate out daily.

Table 4: Consumption Pattern of Adolescents

Variable	Frequency	Percentage (%)
Flow often do you eat in a day?		
Once	6	6.67
Twice	15	16.67
Thrice	48	53.33
Others	21	23.33
Total	900	100
How often do you eat breakfast?		
Daily	42	61.76
Weekly	9	13.24
Monthly	8	11.76
Others	9	13.24
Total	68	100
How often do you eat out?		
Daily	22	22.68
Weekly	28	28.87
Monthly	14	14.43
Others	33	34.02
Total	97	100

Table 5 shows the food types and their corresponding frequency of consumption by the adolescents carbohydrate related foods top the chart, followed by protenous food.

Table 5: Adolescents frequency of consumption of food

Types of Food	Frequency	Percentage
Protein food		
Daily	182	33.64
At least weekly	220	40.67
2-4 times monthly	64	11.83
Seldom	75	13.86
Total	541	100
Daily products		
Daily	109	29.14
At least weekly	120	32.09
2-4 times monthly	88	23.53
Seldom	57	15.24
Total	374	100
Carbohydrates		
Daily	250	45.05
At least weekly	85	15.32
2-4 times monthly	175	31.53
Seldom	45	3.11
Total	555	100
Fruits and vegetables		
Daily	57	20.10
At least weekly	82	28.87
2-4 times monthly	105	36.97
Seldom	40	14.08
Total	284	100
Sweets		
Daily	108	27.84
At least weekly	135	34.79
2-4 times monthly	83	21.39
Seldom	62	15.98
Total	388	100

Table 6 shows the anthropometric status of the adolescents using body mass index (BMI). The were more underweight (11.45% than the males 31.43% and the males were more overweight 17-14 than the (males) 16.92%.

Table 6: Anthropometric measurements of the respondents using body mass index (BMI)

BMI (kg/m^2)	Male		Female	
	Frequency	Percentage	Frequency	Percentage
<18.5= underweight	11	31.43	27	41.54
18.5 -24.9 = normal	18	51.43	27	41.54
≤5.0 – 29.9 = overweight	6	17.14	11	16.92
Total	35	100	65	100

Discussion

This study observed that consumption pattern of the adolescents were inadequate as only in % of them had breakfast daily with breakfast as the most skipped meal eventually affected the daily nutrient intake. Also snacking was common practice among the participants and could be linked to skipping of breakfast. Meal skipping is associated with inadequate nutrient intake, nutrient deficiencies, poor intellectual performance, behavioral and metntal problems (Haines and stang, 2005) [5], low productivity and numerous health challenges such as overweight and obesity as well as eating disorders (Whitney and Rolfesm, 1999) [9]. The snacks often consumed were dense in energy, fast and sugar. These foods contribute to health challenges such as overweight and types 2 diabetes (Cyril *et al*. 2018) [2].

The existence of overweight was found among the adolescents in Port Harcourt, about 34% of the respondents were overweight, with the prevalence of overweight higher in males than the females. Similar prevalence rate was observed by the study Unerri, *et al*., (2017), and (Eeze, *et al*., 2019).

Conclusion

This study revealed presence of overweight among the respondents which could be due to poor dietary habits such as meal skipping and snacking. Behavioural change through nutrition education to promote healthy eating habits and lifestyle is recommended. Also, secondary school administration should provide recreational facilities to encourage the students to engage in physical activities.

References

1. Alfaris NA, Tammini JZ, Al-Tobair MO, Al-shaiyat NM. Trends of fast food consumption among adolescent and young audlts insaudi girls living in Riyadh. Food and nutrition Research. 2015; 59:264-88.
2. Cyril OA, Bernadette NE, Vivienng N Ibeane, Makuochi VU. Prevalence of overweight and obesity among the staff (25-70 years) of the University of Nigeria. Nsukka campus Nigeria Journal of Nutritional Sciences. 2019; 40(2):79-83.
3. Devaneq BL, Gordobu AR, Burghard JA. Dietary intake of Students. American Journal of Clinical Nutrition. 61 Supplementary. 1995; 17:2055-2125.
4. Eze SN, Iheanacho RG, Onyeke GN, Edeh RI. Dietary patterns and prevalence of overweight and obesity among female undergraduate students in university of Nigeria, Nsukka, Nigerian Journal of Nutritional Science. 2019; 40(2):115-119
5. Haines J, Stang J. Promoting Meal consumption among teens. Journal of American Dietetic Association. 2005; 105(16):945-7.
6. Onifadeoyepeji M, Okerietglu J. Olegbayo JA. Nutritional States and eating patterns of preschool children in a community South-west Nigeria Journal, of Nutritional Science. 2019; 40(2):30-37.
7. Singh AS, Muller C, Twick JWR. Van Medrelerz W, Chinapaw MJM. Tracking of childhood overweight into adulthood: a Systematic Review of the Literature. Obesity Review. 2008; 9(5):474-488.
8. Umuerri EM, Ayandele CO, Eze GU. Prevalence and Socio-demographic Correlation of obesity and overweight in a rural and urban community of Delta State, Nigeria Sahel Medical Journal. 2017; 20:173-8.
9. Whitney EN, Rolfes S. Understanding Nutrition 8th ed. Wadsworth, Belmonlts, CA, 1999, 278-302.
10. WHO. Growth reference 5-19 years. World Health Organisation, Geneva, 2007.