



## Obesity: The Socio-Physiological Challenges in Adolescent Health

Ayuk, Clara. O<sup>1</sup> & Mgbenkemdi Ejike .H<sup>2</sup>

Department of Sociology/anthropology, Enugu State University of Science and Technology, Enugu

Department of Psychology, Enugu State University of Science and Technology, Enugu

Email: [sayhitoayukclara@gmail.com](mailto:sayhitoayukclara@gmail.com); [iamejike@yahoo.co.uk](mailto:iamejike@yahoo.co.uk)

### ABSTRACT

*This study examined Obesity: the Socio-Physiological Challenges in Adolescent Health among Secondary School Students in Enugu State metropolis, Enugu-Nigeria. The aim of the study was to examine the predominant factors associated with the life and activities of adolescents in South Eastern Nigeria particularly Enugu state metropolis. The study adopted a survey design methodology, with a close-ended self-administered structured questionnaire. Using Simple Random Sampling Technique, a total of 220 students from five secondary schools in Enugu metropolis, aged between 11 to 18 years old were randomly selected as respondents, which formed the sample of the study. Body mass index of participants were measured and used to compare with the responses from the questionnaire. The study observed that preference of food type such as starchy or foods high in carbohydrates, lack of nutritional diet, cholesterols and lack of exercise lead to obesity and overweight in adolescence than regular food consumption. The study also revealed that there was high rate of stigmatization against students with obesity and overweight body size. It was recommended that the parents/ guidance should watch the kind of food their children eat, again; principals, owners of schools and the government through the Ministry of Education should rejuvenate schools sports festival across secondary schools as a means of keeping students active and healthy through sports. It was also recommended that adolescents and parents should be made aware of the health implications of consuming foods high in fat and cholesterols such as Ice cream and Noodles in order to maintain healthiness and longevity.*

**Keywords: Obesity; Socio-Physiological and Adolescence**

### INTRODUCTION

The global emerging lifestyles prevalent among youths are of great concern to sociologists, psychologists and health practitioners. This is so because these lifestyles have serious psychological, health and social implications. One of these lifestyles is the eating habit of adolescents which often leads to obesity. According to Onyiriuka (2013), "obesity in adolescence is common, and eating habits are key determinants". It is observed that the eating habit in adolescence is different from other stages of life. Nutrition has been observed to constitute a major determinant of obesity in adolescents. While eating in pre-adolescence is determined by the family or caregiver, eating habit in adulthood is structured to maintain good health and prevents health risks such as obesity.

According to the W.H.O (2015), "obesity has been established as one of the public health concerns of the 21<sup>st</sup> century". In time past, this epidemic was relatively associated with adults, but the trend has been extended to children and adolescents. Body Mass Index (BMI) is the acceptable parameter for measuring obesity in adolescents (Deurenberg, Westrate & Seidell, 1991). Although, there are often used interchangeably, obesity and overweight are not the same. According to Centre for Disease Control and Prevention (CDCP), BMI above or equal 95 per cent is seen to be obesity, while from 85 to 97 is classified as overweight. Adolescent Body Mass Index (BMI) often goes unnoticed



because weight assessment is not considered a priority in adolescence (Adesina, Peterside, Anochie & Akani, 2012). Cultural view of healthiness from the perspective of body weight could also be seen to be a factor to the prevalence of obesity among adolescents. Schooling requires the healthiness of a student in order to meet the academic challenges of the school. Since obesity has been classified as a non communicable (but) chronic disease (WHO, 1998), students with obesity find it difficult to cope with the challenges of schooling.

Although the prevalence of obesity is increasing worldwide, this increase has been faster in developing countries such as Nigeria and Ghana, because of the declining level of physical activity, characterized by a trend towards consumption of a diet high in fat, sugar and refined foods low and low in fibre" (Jurgen, Wenig and Wolfenstetter, 2010). Onyiriuka (2013) observed that "Obesity in childhood and adolescence is emerging as a major public health problem of our time and is known to be associated with substantial loss of quality of life and social stigmatization that may trigger or exacerbate depression, anxiety, low self-esteem and feelings of guilt".

### Statement of the Problem

Obesity among adolescents is a challenge that requires urgent attention. In today's world, especially in developing societies such as Nigeria, a good percentage of adolescent are in school, acquiring formal education. UNICEF (2015) put the figure of adolescents in secondary school at 54 per cent. With this, the increasing cases of obesity among adolescence mean more problems for the school system, the family and the society in general. This study seeks to examine the lifestyles and activities of adolescents as well as the challenges associated with obesity among secondary school students in Enugu State, Nigeria. Basically, this study is poised to look at the eating habits of adolescents, the psychological implications, and the socio-cultural factors responsible for such behaviours, extra-curricular activities of the school for the students as well as other challenges associated with adolescence obesity.

### Purpose of the Study

In addition to the general aim of this study which is to observe the socio-physiological challenges of adolescent health among secondary school students in Enugu State, this study revolves around the following specific aims:

- ❖ To identify the prevalent eating habits that lead to obesity in adolescence
- ❖ To assess the routine activities of both obese and non-obese adolescents within the study population.
- ❖ To observe the life and activities of adolescents in secondary school.

### Conceptual Clarification

Here is a list of contextual definitions of key concepts as used in this study. They include:

- i. **Adolescence Obesity:** This refers to a health condition where excess body fat affects an adolescent's health, wellbeing and social interactions.
- ii. **Adolescence:** This refers to a transitional stage of physical, psychological and physiological development which occurs at the onset of puberty, mediating between childhood and adulthood.



- iii. **Habit:** A behavioural pattern acquired through repeated reinforcement of an action such that indulgence is almost subconscious.
- iv. **Body Mass Index:** This refers to the calculation of body weight in consideration of the height.

## LITERATURE REVIEW

Sabageh and Ojofeitimi (2013), in a comparative study, researched on the Prevalence of Obesity among Adolescents in Ile-Ife in Osun State, Nigeria, using Body Mass Index (BMI) and Weight Hip Ratio. Their sample comprised 220 respondents, aged 10-19, and randomly selected through a multistage sampling technique in selected public and private schools in Ile-Ife, Osun State, Nigeria. The instrument of data collection was a pre-test, semi-structured self-administered questionnaire, as well as the anthropometric measurement of respondents' BMI and Weight Hip Ratio (WHR). Data collected were tested and analyzed using Chi Square and Linear Regression Analysis statistical instruments. The findings showed that there was significant association between Sex (gender) and BMI, such that  $\chi^2 = 9.490$  and  $P = 0.020$ . Again, there was a weak correlation of  $r = 0.02$  found between BMI and WHR among females as  $P = 0.043$ . The study concluded that WHR yielded a higher prevalence for obesity with remarkable differences especially among females. It was recommended that prevention of adolescence obesity should be encouraged especially among females.

## METHOD

This study was conducted in secondary schools in Enugu, a metropolitan city in Enugu State, Southern-Eastern Nigeria. A total of 220 students from five secondary schools, aged between 11 to 18 years were randomly selected as respondents using simple random sampling technique which formed the sample of the study. Being a survey design, close-ended structured questionnaire were designed and personally administered to the respondents. Height, body and weight measurement were also measured and recorded against each respondent on the flip side of the questionnaire. Body and weight measurements were done in line with WHO (2007) standards where: observation below 15 percentile was rated underweight; 15 to 84.5 was rated normal weight; 85 to 97 was rated overweight, while above 97 was rated obese. The demographic data of respondents were calculated using the simple percentile method, while the responses from the questionnaire were computed using the Regression Analysis statistical analytic tool.

## Findings: Presentation and Discussion

Data generated from the field were presented using tabular format.

**Table 1.1: Demographic Distribution of Respondents**

Demographic Characteristics of Respondent	Designation	Outcome	Percentage (%)
Sex	Male	101	46%
	Female	119	54%
<b>Total</b>		<b>220</b>	<b>100</b>
Age	<15	98	44.54%



	15 & >	122	55.45%
<b>Total</b>		<b>220</b>	<b>100</b>
<b>Educational Level</b>	JSS	118	53.63%
	SSS	102	46.37%
<b>Total</b>		<b>220</b>	<b>100</b>
<b>Parents</b>	Biological	184	83.63%
	Non-Biological	36	16.37%
<b>Total</b>		<b>220</b>	<b>100</b>
<b>Transportation to School</b>	Vehicle	166	75.46%
	Trekking	54	24.54%
<b>Total</b>		<b>220</b>	<b>100</b>

Source: Fieldwork, 2017

Table 1.1, above, shows the demographic distribution of respondents who participated in the study. Out of the 220 respondents, 101 were males, while 119 were females, representing 46% and 54%, respectively. 98 (44.54%) were less than 15 years old while 122 (55.45%) were 15 years old and above. The table also shows that 118 (53.63%) of the respondents were in junior secondary classes while 102 (46.37%) were in senior secondary section. The study showed that 184 (83.63%) were living with their biological parents while 36 (16.37%) were living with non-biological parents or guardian. In order to investigate the means of transportation of the students to school, the study showed that 166 (75.46%) were using vehicles to school daily, while 6 (24.54%) reported that they always trek to and from school

**Table 1.2: Distribution of Responses from questions**

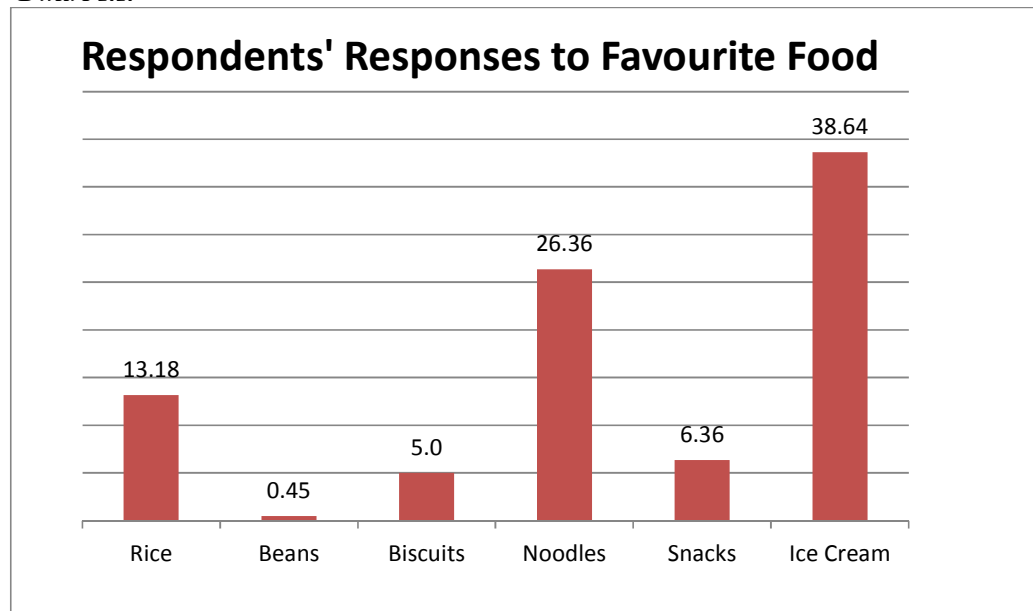
Questions	Observations	%
Do you go to school by car?	Yes	166 75.46%
	No	54 24.54%
Do you trek to school?	Yes	54 24.54%
	No	166 75.46%
Do you eat before going to school?	Yes	199 90.45%
	No	21 9.54%
Do you stay without food till midday?	Yes	13 5.90%
	No	207 94.10%
Do you eat more than 3 times a day?	Yes	24 10.90%
	No	196 89.10%
Do you see fat people as healthy people?	Yes	36 16.36%
	No	184 83.63%
Do you like fat people?	Yes	201 91.36%
	No	19 8.64%
Are you addicted to any Food?	Yes	200 90.90%
	No	20 9.10%
Do you see obesity as sickness?	Yes	205 93.18%
	No	15 6.82%
Do you participate in sports?	Yes	26 11.82%
	No	194 88.18%

Source: Fieldwork, 2017



In table 1.2, which captures the questions in the questionnaire seeking to observe the predisposing factors associated with obesity, 166 (75.46%) respondents indicated that they go to school using a car or vehicle, while 54 (24.54) often trek to school; 199 (90.45%) eat breakfast before going to school, while 21 (9.54%) often skip breakfast. Similarly, 207 (94.10%) responded 'No' to indicate that they do not stay without food past midday, 13 (5.90%) often skip breakfast till midday. 24 (10.90%) indicated that they eat more than 3 times a day, while 196 (89.10%) do not eat beyond 3 times in a day. To measure if obesity is seen as healthiness, 184 (83.63%) reacted 'No' while only 36 (16.36%) sees obese people as a healthy. 201 respondents representing (91.36%) do not like fat (obese) people, while only 19 (8.64%) like fat people. To observe if the participants were addicted to any food, 200 (90.90%) affirmed their addiction to one food to a particular food while 20 (9.10%) say they are not addicted to any particular food type. Similar to the responses on the likeness of fat people, 205 (93.18%) showed they see obesity as disease while 15 (6.82%) responded otherwise. Interestingly, while 26 (11.82%) of the respondents do not participate in any sporting activity, 194 (88.18%) were active participants in sports.

**Chart 1.1:**



**Source: Fieldwork, 2017**

In chart 1.1, which measures respondents' responses to favourite food, 85 (38.64%) indicated Ice Cream as their favourite food; this is followed by Noodles and Rice which had 58 and 29 representing 26.36% and 13.18%, respectively. Other favourite foods indicated were Snacks and Biscuits which had 14 (6.36%) and 11 (5.0%). Only 1 (0.45%) respondent indicated Beans as her favourite food.



**Table 1.3: Participants' BMI Observation**

BMI	Observation	%
Underweight	84	38.18%
Normal Body Size	97	44.1%
Overweight	27	12.27%
Obese	12	5.45%
<b>Total</b>	<b>220</b>	<b>100</b>

**Source: Fieldwork, 2017**

In calculating the participants' Body Mass Index (BMI), table 1.3 shows that participants with Normal Body Size (NBS) were the highest with 97 representing 44.1%; participants with Underweight Body Size (UBS) were 84 representing 38.18% while 27 respondents representing 12.27% were seen to be Overweight. Only 12 respondents representing 5.45% were observed to be Obese.

## DISCUSSION

Using the Regression Analysis, as statistical tool in computing the observations in chart 1.1 and table 1.3, above, which measured the addiction to food consumption and the observed BMI of participants, the calculated value of  $Y = 13.1$  showed that obesity is significantly dependent on food consumption, and specifically, food type which in this case shows high consumption of carbohydrates and fatty foods. The study also showed that majority of adolescents take breakfast before leaving for school. This finding confirms earlier research by Coelho, et al (2012) and Lateef, et al (2016) which shows that 77% of adolescents do eat breakfast before leaving for schools.

However, the study disagreed with Lateef, et al (2016) that snacks was the most consumed food type by adolescent, becoming a major determinant of obesity among adolescents. This study also showed that there is no significant relationship between non-indulgence in physical activities (88.18%) and abnormal body weight above 85 percentile (17.72%). Again, this study shows that majority of adolescent students (93.18%) view obesity of overweight as disease, hence the prevalence of stigmatization against overweight and obese students. Finally, this study showed that obesity and overweight are not dependent on the regularity of food consumption (89.10%) but on the type of food consumed as shown in the chart in chart 1.1 above.

## CONCLUSION

This study on Obesity: the Socio-Physiological Challenges in Adolescent Health among Secondary School Students was conducted in Enugu State, Nigeria. The aim of the study was to examine the predominant factors associated with the life and activities of adolescents in sub-Saharan Africa. The study observed that preference of food type such as starchy or foods high in carbohydrates and cholesterol were more likely to lead to obesity and overweight in adolescence than regular food consumption. The study also revealed that there was high rate of stigmatization and psychological effects against students with obesity and overweight body size.





## RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made:

1. Adolescents and parents should be made aware of the health implications of consuming foods high in fat and cholesterol such as Ice cream and Noodles.
2. Secondary school administrators and teachers should intensify the campaign against stigmatization against people with health challenges, especially in schools.
3. The government through the Ministry of Education should rejuvenate schools sports festival across secondary schools as a means of keeping students active and healthy through sports.

## REFERENCES

- Adesina, A., Peterside, O., Anochie, I. and Akani, W. (2012): Weight Status of Adolescents in Secondary Schools in Port-Harcourt using Body Mass Index (BMI). *Italian Journal of Pediatrics*. Vol.38(31)
- Center for Disease Control and Prevention (ND). Healthy Weight: Assessing Your Weight: BMI: About BMI for Children and Teens.
- Coelho, L., Candido, A., Machado-Coelho, G. and Freitas, S (2012). Breakfast Consumption and CVD Risks Factors in European Adolescents: the HELENA (Healthy Lifestyle in Europe by Nutrition in Adolescents) study. *Public Health Nutrition*. Vol.16(7): 1296-1305
- Deurenberg, P. Weststrate, J. and Seidell, J. (1991). Body Mass Index as a Measure of Body Fitness: Age and Sex-Specific Prediction Formulas. *British Journal of Nutrition*. Vol.65 (2): 105-114
- Jurgen J, Wenig, C. and Wolfenstetter, S. (2010). Recent Economic Findings on Childhood Obesity: Cost-of-Illness and Cost-Effectiveness of Interventions. *Current Opinion Clinic Nutrition Care*. Vol.13(3):305-313
- Lateef, O.J., Njogu, E., Kiplamai, F., Haruna, U. S and Lawal, R. A. (2016). Determinants of Overweight and Obesity among Adolescent Students in Public Secondary Schools in Kwara State, Nigeria. *Current Research in Nutrition and Food Science*. Vol.4(2)
- Oniriuka, A. N. (2013). Weight Status and Eating Habits in Adolescent Nigerian Secondary School Girls. *South African Journal of Child Health*. Vol.7(3): 108-112
- Sabageh, AO and Ojofeitimi, EO (2013). Prevalence of Obesity among Adolescents in Ile-Ife, Osun State, Nigeria, using Body Mass Index and Weight Hip Ratio. *Nigeria Medical Journal*. Vol.54(3): 153-156
- W.H.O (2015). Childhood Overweight and Obesity.
- WHO (2007). BMI-for-age, Boys and Girls (5-19). Geneva, Switzerland.