

The prevalence of overweight and obesity among adolescents in public and private school in two senatorial district of Osun State, Nigeria.

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Abstract: Obesity is the most serious long term health problem currently facing adolescents and its prevalence increasing worldwide including developing countries. Cross sectional study was carried out among age 11-19 years in both public and private school in urban area of the state. The data was collected using pretest self-administered questionnaire; Anthropometric measurement was also used to examine their nutritional status. Obesity status were determined using BMI cut off point, the overweight was found to be 3.06% among female and 0.6% among male whereas prevalence of obesity was 0.46% in female and non among male. 62.6% snack daily, fruit consumption pattern was low 0.6% and 43.7% spend between 4-5 hours watching television daily after school. Positive association exists between the lifestyle and nutritional status of the respondents. Education effort to improve nutrition knowledge can be incorporated into course curriculum and focus on various components within the system when implementing preventive measure on obesity.

Key words: prevalence, overweight, obesity, adolescent

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I. INTRODUCTION

World Health Organization [1] defined adolescence as the period from 10 to 19 years of age. Adolescent comprises 20% of global population and 85% of them live in developing countries. Adolescent is an important growth and development period which has implication for future nutritional status and food consumption habits [2]. It is the transitional period between childhood and adulthood [3]. The prevalence of overweight and obesity in children and adolescents in both developed and developing countries is steadily increasing. In addition, in developing countries, it is often accompanied by underweight. Adolescence considered as one of the most important stages of growth and development and therefore, consideration of nutritional status of adolescents is essential, [4] stated that inappropriate nutritional habits and unhealthy life-style are important health threatening factors of this vulnerable group and may eventually, lead to chronic diseases in adulthood [5] stated that, there is evidence that food intake patterns are established before adolescence [6], they may also change substantially during adolescent and these modified food patterns, if unhealthy, are likely to influence the health and disease risk in later future life [7]. Weight gain during adolescent carries a higher risk for adult obesity and the metabolic syndrome [8]. The health outcomes of adults appears to be more strongly associated with adolescent risk factors than those found in childhood [9]. Obesity is quickly becoming one of the most prominent condition affecting children and adolescents [10]. [11] Mentioned that Childhood obesity has more than tripled in the past 30 years. The data from WHO covering 84 countries around the world in 1999-2000, showed that the global prevalence of obesity ($BMI > 30 \text{kg/m}^2$) was 8.7% the prevalence of obesity has increased substantially over the last few decades and indications has shown that this trend will continue [12]. The prevalence of obesity among children 6 to 11 years increased from 6.5% in 1980 to 19.6% in 2008 [11]; Apart from socio-economic factors there are other determinants such as family structure, culture, parenting style, exposure to media and internet, and physical activities influencing children eating habit [13].

The better idea is to increase physical activities, over all the daily physical activities about 30minutes is a minimum while 60minutes is normal/day [14]. Also fruit and vegetable food group is widely recognized in promoting healthy weights and preventing chronic disease [13] Therefore, the purpose of the study was to examine effect of socio economic factors of the parents and physical activities, fruits consumption of the adolescent on the prevalence of overweight and obesity among adolescents in public and private schools

II. SUBJECTS AND METHODS

A cross section sectional study was carried on a representative sample of 430 secondary students in 13 public schools and 15 private schools a representative from age 11-19 years.

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2.1Technique: Random sample technique was used to select sample from schools though pre-test of structure questionnaire was used to elicit information on socio-economic status, dietary habit, life style and physical activities of the subject. Nutritional status of the students were assessed using BMI for age in relation to the growth chart of national Centre for disease control and prevention (CDC).

2.2Analysis: Data collected was analyzed using SPSS 19.0 to calculate proportion and Chi square test to find out significant association variables.

III. RESULTS

Table 1: Personal Data of the Respondents

Age	Respondent	Percentage
11-14	162	37.67
15-19	268	62.33

Table 2: Distribution of Socioeconomic Characteristics by Body Mass Index for age Percentile of Respondents

	Underweight	Normal	Overweight	Obese	χ^2	P-value
Sex						
Male	79 (18.37)	123 (28.6)	3(0.69)	0 (0.0)	122.721	0.000*
Female	51(11.86)	155 (36.0)	17 (3.06)	2 (0.46)		
Age (years)						
12-14	20 (2.4)	185 (22.5)	7 (0.9)	7 (0.9)	5.119	0.163
15-18	85 (10.4)	492 (59.9)	11 (1.3)	14 (1.7)		
Education level of mothers						
No education	9(0.69)	33 (7.67)	0 (0.0)	0(0.0)	20.686	0.014
Primary education	23(5.35)	25 (5.8)	2 (0.46)	0 (0.0)		
Secondary education	57 (13.26)	116 (26.9)	9 (2.1)	0(0.0)		
Tertiary education	41 (9.53)	110 (25.5)	3 (0.7)	2 (0.46)		

Table 3 Fruit frequency consumption of the respondent

\leq Once/day	Twice/day	\geq Thrice/day
365(84.9%)	62(14.4%)	3(0.69%)

IV. DISCUSSION

The cross sectional study carried out on 430 adolescent ,table 1 shown the proportion of adolescent aged 10-14 years and 15-19 years were 37.67 % and 62.33 % respectively in the present study compared to 41.2% and 58.8 % reported in the study [15]. Body Mass Index (BMI) for age as recommended for use in all children from age 1-20 years age 18 which is an indicator of nutritional status among the adolescent in this study, the prevalence of under nutrition (BMI<18.5) observed as 30.20%, while 4.65%, of the subjects were overweight BMI > 25 among which female proportion overweight was 3.06% and obesity was 0.6% but 7% adolescent was overweight has reported [16].The result of our study in table2 revealed the proportion of

adolescent (2.4%) in age group 11-14 years who's under nutrition was significantly ($P < 0.05$) increased with advanced in age 10.4% in 15-19 years age group as contained in the table 2, it was in agreement with the study of [17] which found association in age advance and nutritional status of adolescent. A significant association also exist between the nutritional status of adolescent and the mother's socio economic status, as earlier reported by Vella et al, 1992^[18] and also found association with a number of factors such as socio economic and environmental characteristics.

In this study prevalence of under nutrition was 0.69% in the subjects whose mothers were illiterate followed by 5.35% in the subjects whose mothers had primary education and significant decreased with the level of mothers education shown in table 2, [19] said literate mothers can influence health of their children by total integration into the use of modern health care but contrast with the level of result found in [20] showed no significant exist with nutritional status. The study find no significant between family background and nutritional status of the subjects. [21] Found no significant association between the parents' education level and BMI in India girls was not in relation to that of their socio economic status.

In this study fruit consumption was as low as 0.6%, taking fruits three times daily only 55% of the respondents hardly take fruit once per day found in table 3. Report revealed that 60.6% of respondent preferred snacks than taking fruits Epidemiological evidence suggests that regular fruits and vegetable consumption is associated with a significant reduction in the risk of chronic disease such as cancer, obesity etc. [22] – [27] the fruit and vegetable food group is widely recognized as crucial in promoting health weight and preventing chronic disease [28]

This result of the study also compare the BMI and physical activity, 43.7% of the respondents spend 4-5 hours on internet and watching television. It was revealed that the lack of regular physical activities and exercise is greatly considered as an important factors in development of obesity and heart disease [29, 30].

RECOMMENDATION

Parental nutrition education programme as part of awareness especially for mothers and school children should be introduced which may serve as intervention to reduce or eliminate health problem in children and society at large.

V. CONCLUSION

The prevalence of overweight and obesity among the school children assessed by this study needs intervention early recognition of excessive weight gain relative to linear growth is important and also routine assessment of all children needs to become standard clinical practice from very early childhood because the trend of overweight and obesity start at early stage. The affected adolescent in this study should be counseled on appropriate good eating habit and other preventive intervention. The Dynamic analysis may not be better capture the impact of any intervention programme but measurement of nutritional status would be more precise and more sensitive to better change

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