Original Article

Dietary Patterns and Physical Activities among University Students in Kogi State, Nigeria in Relation to Obesity

Moses Folusayo Adeola[1], Mohammed N Abubakar[2], Suleiman Usman Omeiza[3], Dauda Joseph Abiodun[4], Ahmed Sani Getso[5], Nurudeen O. Abubakar[6], Tanko Onotu Sule[7], Joshua Ojonugwa Momodu[8]

[1]Lecturer, [2]Reader Department of Human Kinetics and Health Education, Prince Abubakar Audu University, Anyigba, Kogi State, Nigeria, [3]Senior Lecturer Senior Lecturer Department of human kinetics and health education Ahmadu Bello University, Zaria, [4]Lecturer Department of Pure and Industrial Chemistry, Prince Abubakar Audu University, Anyigba, Kogi State, Nigeria, [5]Lecturer Department of human kinetics and health education Ahmadu Bello University Zaria, Nigeria, [6]Lecturer Department of human kinetics and health education Prince Abubakar Audu University, Anyigba, Nigeria, [7]Lecturer, [8]Student, Department of human kinetics and health education, Prince Abubakar Audu University Anyigba, Nigeria.

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Abstract

Background: Nigeria is experiencing a rapid transition of physical activity and nutrition involving less physical participation and increased intake of high calorie foods with poor nutrients. University years are when young people live independently or rise far from home, leading to decreased physical activity participation and adoption of poor dietary patterns.

Purpose: this study examined university students dietary patterns and physical activity in Kogi State, Nigeria.

Material and Methods: The research design used is descriptive cross-sectional survey with a random sampling technique. Data was collected using questionnaire from 320 students selected from the four universities on their dietary patterns and physical activity. Data analysis was conducted via SPPS version 20 and relationships between variables were established through Pearson product moment correlation co efficiency. A P-value of less than 0.05 was considered significant and table was used to present the findings.

Results: The results of the study convincingly indicated that students exhibited poor dietary patterns whereby students consumed fast foods, sweetened beverages, and pastries most times in a week. Also, the result showed significant relationship between physical activity and obesity whereby students decreased in vigorous physical activity participation.

Conclusion: the study concluded that there is a significant association between dietary patterns, physical activity and obesity among university students in Kogi State, Nigeria.

Keywords: Dietary Patterns, physical activity, obesity, students.

Corresponding Author: Moses Folusayo Adeola, Lecturer, Department of Human Kinetics and Health Education, Prince Abubakar Audu University, Anyigba, Kogi State, Nigeria.

E-mail: mfolusayo@gmail.com

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Introduction

Obesity is defined as a condition caused by excessive fat accumulation in the body, which has a negative impact on health, resulting in a shorter life expectancy and/or increased health problems [1,2]. Obesity has reached epidemic proportions in both developed and developing countries, affecting virtually every social and economic aspect regardless of age, gender, socioeconomic status, or ethnicity [2,3]. Every year, at least 2.8 million people die as a result of being overweight or obese, and one in every six adults worldwide is obese [4]. The World Health Organization (WHO) established a body mass index (BMI) of more than 30 as the cutoff point for measuring obesity.

The high rate of obesity worldwide is being caused by environmental and behavioral changes brought about by economic development, modernization, and urbanization. These changes include low levels of physical activity, excessive consumption of high-energy foods, poor consumption of fruits and vegetables, and a sedentary lifestyle, especially when watching television [1,2]. The health implications of these changes are becoming increasingly apparent. Individuals who are obese are more likely to have significant health risks associated with cardiovascular disease, including high blood pressure, diabetes, high cholesterol, metabolic disturbances, respiratory conditions, and liver disease. Additionally, social discrimination, psychological stress, and low self-esteem are likely to be experienced by them [3,5].

In terms of risk factors, economic growth, and public health outcomes, the shift in nutrition and physical activity within the university setting—which involves eating foods high in calories but low in nutrients and engaging in less physical activity—has significant consequences [6]. The increase in obesity cases, which adds to the burden of non-communicable diseases, is a sign of this transition [7]. University students' poor dietary habits and physical inactivity contribute to the acceleration of chronic disease development, which continues into middle and late adulthood after graduation.

Fruits and vegetables are typically absent from the diets of university students. Due to their frequent snacking and consumption of fast food, their diets are high in fat, sugar, and sodium [8]. Despite the advantages to health, youth physical activity levels sharply decline after secondary school. University students cut out scheduled exercises when the pressure of an increasingly demanding schedule gets to them [9].Increased bone density, improved cardiovascular health, decreased anxiety and depression, and lower cholesterol are just a few of the health advantages of physical activity.

Overweight and obesity are linked to poor dietary choices and physical inactivity, both of which increase the risk of developing chronic illnesses. According to McKinney [10], university students may have a higher obesity rate than their non-college or non-university counterparts. Examining physical activity and bad eating habits in relation to overweight and obesity alone is insufficient, though. According to recent research, people who are overweight or obese and maintain healthy eating and exercise habits are healthier than people with a normal BMI who do not exercise or consume unhealthy foods [11]. Weight control requires both healthy eating practices and physical activity. Exercise and healthy eating have a synergistic effect that greatly reduces the risk of chronic diseases and other risk factors when done in tandem rather than separately [12].

Due to growing responsibilities and a lack of accountability, students' participation in physical activity drastically declines as they enter college [6,9]. Students also develop unhealthy eating habits as a result of their university years, which are characterized by living away from home and encountering a variety of food situations that lead to unhealthy eating habits [8].

University students are more likely to be obese due to inadequate physical activity and unhealthy eating habits [13], which also raises the incidence of a number of chronic diseases. It is concerning that between 10 and 20.7% of university students in Nigeria were overweight or obese, according to research by Adeloye et al. [14]. It is essential to research university students' dietary and physical activity habits. This is because it can be challenging to modify health-related behaviors that were acquired during college years later in life, which makes it difficult to identify the kind and severity of chronic illnesses [15,16]. Future nation-builders, vision 2030,

and economic drivers are university students. Thus, the purpose of this study was to investigate whether there is a meaningful correlation between obesity and undergraduates' dietary habits and physical activity levels.

Materials and Methods

The study employed a descriptive cross-sectional survey design. Three hundred and twenty (320) students from the four universities in the state participated in the study. The sample sizes in the institutions were determined proportionately as per the student population in the respective institutions. A list of faculties was obtained from the respective institutions, and students were randomly selected from each faculty until the sample size was achieved.

Instrument

The instrument used for this study is a structured questionnaire. The questionnaire was divided into three parts. The first part is on the socio-demographic data of the respondents. The second part is on the relationship between dietary patterns and obesity, while the third part is on the relationship between physical activity and obesity. Parts two and three have five items each, which the students had to indicate on a modified four-point Likert scale from strongly agree to strongly disagree.

Procedure

The researchers personally visited the universities to administer the questionnaire to the respondents after school management approval for the study was granted by the management of the four universities. Also, verbal consent was obtained from each respondent student after explaining the purpose of the research, the anonymous nature of the responses, and the use of data for merely academic purposes. Participation was fully voluntary, and confidentiality was assured by the use of a code on the assessment forms. The questionnaire was collected on the spot after it had been filled out.

Statistically Analysis

Data collected from the respondents were analyzed using the statistical package for social sciences (SPSS) version 20. Results obtained were presented as percentage and frequency counts for demographic data, while dietary patterns and physical activity in relation to obesity were analyzed using Pearson product moment correlation co-efficacy. A P-value <0.005 was considered statistically significant at the 0.05 alpha level of significance.

Ethical Considerations

Ethical clearance and permission were obtained from the Prince Abubakar Audu University Ethical Review Committee. The nature of the study was fully explained to the study participants to obtain their oral informed consent prior to participation in the study, and the data was kept confidential.

Table 1: Socio-demographic data of the respondents

Variables (gender)	Frequency	Percentage
Male	150	46.9
Female	170	53.1
Total	320	100

Schools	Frequency	Percentage
Prince Abubakar Audu University	126	39.4
Federal Univesity, Lokoja	108	33.8
Kogi State University of Science and Techonology, Osara	56	17.5
Salem University, Lokoja	30	9.3
Total	320	100

Year of Study	Frequency	Percentage
100 level	36	11.3
200 level	42	13.1
300 level	65	20.3
400 level	117	36.5
500 level	60	18.8
Total	320	100

As indicated in **Table 1**, 150 (46.9 %) of the respondents were male and 170 (53.1%) were female. Also, table 1 revealed the distribution of respondents based on schools as 126 (39.4 %) from Prince Abubakar Audu University, 108 (33.8 %) from Federal University, Lokoja, 56 (17.5 %) from Kogi State University of Science and Technology, and 30 (9.3 %) from Salem University, Lokoja. In addition, students from all levels were represented in the study.

Table 2: Pearson "r value on the relationship between dietary patterns and obesity.

Variables	N	Mean	Standard Deviation	r-value	P-value
Dietary Pattern	320	3.36	236	5.259	0.003
Obesity	320	3.31	339	5.259	0.003

The result in **Table 2** showed the relationship between dietary patterns and obesity. The table revealed an r-value of 5.259 and a P-value of 0.003. This implies that there is a significant relationship between dietary patterns and obesity among university students in Kogi State, Nigeria. Thus, poor dietary patterns may lead to obesity among students.

Table 3: Pearson "r" value on the relationship between physical activity and obesity

Variables	N	Mean	Standard Deviation	r-value	P-value
Dietary Pattern	320	3.41	329	3.376	0.001
Obesity	320	3.31	339	3.376	0.003

P<0.05.

The result in **Table 3** indicates that a calculated r-value of 3.376 was obtained. The value is higher than the P-value of 0.001 at the 0.05 probability level of significance on the basis of this observation, which means that there is a significant relationship between physical activity and obesity among university students in Kogi State, Nigeria. Thus, inadequate physical activity may increase the risk of obesity among students.

Discussion

The results showed that there is a strong correlation between dietary patterns and obesity in relation to the relationship between the two. The results demonstrated that eating snacks more frequently than three times a week is associated with a higher prevalence of obesity. This finding is consistent with that of Batiha et al. [5] and Arar et al. [2], who discovered that unhealthy food and drink consumption, including snacks, may be the cause of the high prevalence rate of obesity. Zaki and Youness's [3] subsequent study (2022) discovered that the majority of obesity risks are directly linked to poor eating practices and the use of particular diets, such as skipping meals, dining out, consuming a lot of fast food and processed foods, consuming a lot of calories from food that causes weight gain, drinking a lot of calorie-containing beverages, and consuming a low amount of fruits and vegetables. It follows that students who follow healthy eating habits may have lower incidence of obesity, whereas students who follow risky or unhealthy eating habits are more likely to develop obesity.

Additionally, the results of this study indicate a strong correlation between obesity and physical activity. The current study discovered that students who did not participate in a regular physical activity program had a high prevalence of obesity. This might be due to the fact that sedentary behaviors and physical inactivity, such as playing video games, using computers, and watching TV, are becoming more and more common among university students. It has also become much easier for students to stay in instead of going out with friends to engage in physical activity.

These results are in line with earlier research that discovered sedentary lifestyles and a decrease in physical activity are significant risk factors for obesity among college students [3]. Lack of regular physical activity has been identified as a major contributing factor to the rising rate of obesity [17]. Research by Wu et al. [18], Batiha et al. [5], Hong et al. [19], Sharma et al. [4] and Batiha et al. [5] also showed that regular physical activity lowered the risk of obesity, while a lack of physical activity or a reduction in it has been identified as a major contributor to the rise in obesity.

Conclusion

The condition known as obesity is brought on by the buildup of extra body fat. University students' obesity is strongly correlated with their dietary and physical activity habits. Based on the results, the study also came to the conclusion that the main causes of the rise in obesity among university students in Kogi State, Nigeria, are an increase in the consumption of fat and energy-dense foods, a decrease in physical

activity, and an increase in sedentary behavior. Thus, it is important to encourage healthy lifestyles that include balanced diets high in fruits, vegetables, grains, and cereals and low in energy density, along with increased physical activity and a decrease in sedentary behavior, both at home and in schools. Additionally, universities in the state of Kogi should offer an introductory general course on the value of a healthy diet and physical activity for their students in order to encourage both physical activity and the adoption of good dietary practices. Additionally, it is important to support the development of nutrition and health policies by ministries and universities in Kogi state, Nigeria, that encourage university students to eat healthily and engage in vigorous physical activity regardless of their weight.

Conflict of Interest: The authors declare no conflicts of interest

Source of Funding: Self

Ethical Clearance: Ethical clearance (CHSREC/2021/0014) was obtained from the institutional committee prior to the commencement of the study.

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