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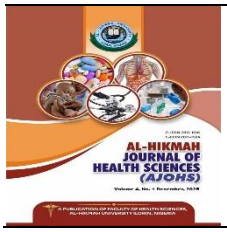

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Original Article

Knowledge, Prevalence and Risk Factors of Obesity Among Undergraduate Students in Al-Hikmah University, Ilorin, Kwara State

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ABSTRACT

Background: Obesity is a major global public health challenge, with a rapidly increasing prevalence among young adults in Nigeria. This increase is largely attributed to unhealthy dietary practices, sedentary lifestyles, and inadequate knowledge of obesity-related risks. This study assessed obesity-related knowledge, determined the prevalence of obesity, identified associated risk factors, and examined awareness of obesity-related health problems among undergraduate students of Al-Hikmah University, Ilorin, Kwara State.

Methodology: A descriptive cross-sectional design was employed among full-time undergraduates enrolled during the 2024/2025 academic session. Using Cochran's formula, 300 respondents were selected through simple random sampling. Data were collected using interviewer-administered questionnaires, anthropometric measurements and analyzed using descriptive statistics, including frequencies, percentages, and mean scores.

Results: Findings showed a moderate overall level of obesity knowledge among respondents (52%). The prevalence of obesity was high, with 13.3% classified as obese and 62.0% as overweight, resulting in a combined prevalence of 75.3%, exceeding national averages. Significant risk factors included frequent fast-food consumption, low intake of fruits and vegetables, inadequate physical activity, and family history of obesity. Approximately 96% of participants were aware of obesity-related health problems.

Conclusion: Obesity among undergraduates is influenced by lifestyle, environmental, and hereditary factors

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Introduction

Obesity is a disorder that is represented by excess and/or unhealthy body fat. (Garvey WT, and Mechanick JI, 2020). Obese and overweight people have a high risk of many diseases, such as diabetes, hypertension, cardiovascular disease, stroke, and at least 13 types of cancer, as well as an enhanced risk of all-cause mortality, compared to people of normal weight. (Kitahara C.M. et al., 2014; Adams K.F. et al., 2006. Cohen S.S. et al., 2014). Physicians often employ a measure known as the body mass index (BMI) to determine the extent of a patient's body fat.

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BMI of a person is the weight (in kilograms), divided by height (in meters) and squared, which has been frequently expressed as kg/m2. Body mass index (BMI) is not a direct measure of body fat, but it is a better measure of obesity than body weight.

Obesity among university students has received increasing research attention in Nigeria; however, most existing studies are concentrated in public universities, particularly federal and state-owned institutions. Al-Hikmah University, Ilorin, as a private faith-based university, represents a unique and relatively understudied population within the Nigerian higher education system. Students in private faith-based institutions often experience distinct socio-cultural, dietary, and lifestyle environments shaped by institutional policies, residential patterns, food availability, and religious norms, which may influence obesity risk differently from those in public universities. Research indicates that obesity and overweight are significant issues among the undergraduates in Nigeria. Indicatively, Kayode and Alabi (2020) discovered that 9.3% of the students in the Osun State were fat, and 31.0% were overweight in the private universities. On the same note, (Oluwasanu et al. 2023) also found that 7.2 percent of students at the University of Ibadan were obese and 18.7 percent of the students were overweight. A recent survey on Benin City has shown that more than 19.4% of undergraduates were overweight or obese (Ehwarieme & Emina, 2024). Nationally, 14.3% of obese and 25.0% of overweight children under 15 years of age were estimated in 2020 (Adeloye et al., 2021). Surprisingly, (Adeloye et al., 2021). found higher prevalence of overweight and obesity (27.2% and 14.4%, respectively) in urban population compared to the rural population (16.4% and 12.1%). According to Adeloye et al. (2021), the factors that contributed to obesity in Nigeria include urbanization, unhealthy lifestyles, and intake of highly processed diets, besides mentioning the role played by the proliferation of sedentary lifestyles and the increased number of processed food stores. This study, therefore, assessed the level of knowledge, prevalence, and risk factors of obesity among undergraduate students of Al-Hikmah University, Ilorin, Kwara State.

Methodology

Study Design: A descriptive cross-sectional study design was adopted. The study was conducted at Al-Hikmah University, Ilorin, Kwara State, a private faith-based institution with students drawn from diverse socio-economic and cultural backgrounds. The university environment, including accommodation patterns, food outlets, and recreational facilities, provides a relevant context for examining lifestyle-related health outcomes.

Study Area and Population: The study population comprised full-time undergraduate students enrolled during the 2024/2025 academic session across all faculties and academic levels (100–500 level). Students aged 16–30 years who consented to participate were included, while pregnant students and those with medical conditions or medications known to affect body weight were excluded.

Sample Size and Sampling Technique: Using Cochran's formula and an assumed obesity prevalence of 20%, a minimum sample size of 246 was calculated. This was adjusted for non-response, resulting in a final sample size of 300 students. A multistage sampling technique was employed: five faculties were randomly selected, followed by the selection of one department from each faculty. Proportional allocation and systematic sampling were then used to select respondents from class registers.

Data Collection: Data were collected using a structured, interviewer-administered questionnaire adapted from validated tools. The questionnaire covered socio-demographic characteristics, knowledge of obesity, dietary habits, physical activity, sleep patterns, and family history. Anthropometric measurements (height and weight) were taken using standardized equipment, and BMI was calculated according to WHO criteria.

Data Analysis: Face and content validity were ensured through expert review. Reliability testing yielded acceptable Cronbach's alpha values (>0.75). Knowledge of obesity was assessed using six structured questionnaire items. Responses were scored on a five-point Likert scale, with higher scores indicating better knowledge. Data were analyzed using SPSS version 25. Descriptive statistics summarized variables, while chi square test (The chi-square test of independence was used to assess associations between categorical variables such as obesity status, knowledge level, physical activity, dietary habits, and family history of obesity) and t-tests examined associations between knowledge, risk factors, and obesity prevalence. Statistical significance was set at $p < 0.05$.

Ethical Considerations: Ethical principles were upheld at Kwara State Ministry of Health with approval reference: ERC/MOH/2025/08/493. Ethical approval was obtained from the Al-Hikmah University Ethics Review Committee. Participation was voluntary, informed consent was obtained, and confidentiality was maintained throughout the study

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Results

Table1: Demographic Distribution of the Respondents

Age	Frequency N=300	Percentage (%)
16-20 years	90	30.0
21-25 years	189	63.0
26-30 years	21	7.0
Gender		
Male	139	46.3
Female	161	53.7
Faculty		
Health Sciences	44	14.7
Natural Sciences	80	26.7
Nursing	7	2.3
Humanities	158	52.7
Education	11	3.7
Years of Study		
100 L	43	14.3
200 L	59	19.7
300 L	7	2.3
400 L	172	57.3
500 L	19	6.3
Residential Status		
On-campus	10	3.3
Off-campus (Alone)	60	20.0
Off-campus (With Family)	184	61.3
Off-campus (With Roommates)	46	15.3
Total	300	100.0%

Most respondents were aged 21–25 years (63.0%), female (53.7%), and from the Faculty of Arts (52.7%). The majority were in 400 level (57.3%) and lived off-campus with family (61.3%).

Table 2: Knowledge of Obesity among Undergraduate Students in Al-Hikmah University

Variables	Frequency N=300	Percentage %
Define obesity?		
Excessive weight gain alone	10	3.3
Abnormal or excessive fat accumulation affecting health	49	16.3
Overeating only	196	65.3
I don't know	45	15.0
Obesity results primarily from?		
Genetic predisposition	16	5.3
Environmental and lifestyle factors	74	24.7
Psychological factors	7	2.3
A combination of the above	161	53.7
I don't know	42	14.0
Contributors to obesity?		
High-calorie diet	88	29.3
Sedentary lifestyle	79	26.3
High-stress levels	47	15.7
Genetic factors	66	22.0
Hormonal disorders/ Sleep deprivation	16/4	5.3/1.3

Overall Knowledge of obesity among respondents was moderate (52%).

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Table 3: Prevalence of Obesity among Undergraduate Students in Al-Hikmah University

Variables	Frequency N=300	Percentage %
BMI = Weight (kg)		
Underweight (<18.5)	17	5.7
Normal (18.5–24.9)	57	19.0
Overweight (25–29.9)	186	62.0
Obese (≥30)	40	13.3
How satisfied are you with your current weight?		
Very satisfied	21	7.0
Satisfied	69	23.0
Neutral	7	2.3
Dissatisfied	153	51.0
Very dissatisfied	50	16.7
Have you experienced significant weight gain in the last 6 months?		
Yes	140	46.7
No	160	53.3
Have you tried to lose weight?		
Yes	149	49.7
No	151	50.3

The study showed that majority of students were either overweight or obese (75.3%). Thus the prevalence of obesity among undergraduate students at Al-Hikmah University is high, with 13.3% classified as obese and 62.0% as overweight, making a combined prevalence of 75.3%.

Table 4: Risk Factors (dietary habits) Associated with Obesity among Undergraduate Students in Al-Hikmah University

Variables	Frequency N=300	Percentage %
How many meals do you consume per day?		
1	17	5.7
2	57	19.0
3	186	62.0
>3	40	13.3
Frequency of fast-food consumption		
Never	15	5.0
1–2 times/week	69	23.0
3–5 times/week	174	58.0
Daily	42	14.0
Fruit and vegetable intake per day		
None	140	46.7
1–2 fruits and veggies	160	53.3
3–4 fruits and veggies	149	49.7
>5 fruits and veggies	151	50.3

Dietary habits revealed frequent fast-food consumption, with over half of the respondents consuming fast food three or more times per week. Fruit and vegetable intake was generally low.

Physical activity levels were suboptimal, with only a small proportion engaging in daily exercise. Poor sleep duration was common, with most students sleeping fewer than the recommended hours.

Family history of obesity-related diseases and limited access to healthy food options and fitness facilities were also reported.

Statistical analysis showed that knowledge had a significant impact on obesity prevalence ($p < 0.05$). Similarly, lifestyle and environmental risk factors were significantly associated with obesity prevalence among the students.

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Discussion

The study showed that the overall level of knowledge regarding obesity among undergraduate students of Al-Hikmah University is moderate (52%), as many students recognized the multifactorial causes and some associated health risks, but misconceptions still exist regarding definitions, contributors, and prevention strategies. The findings of this study is consistent with reports from previous studies. For instance, Iloh et al. (2021) in a study among Nigerian undergraduates found that while many students recognized obesity as a health condition with multiple causes, substantial misconceptions persisted regarding its definition and prevention.

The result of this study revealed that the prevalence of obesity among undergraduate students at Al-Hikmah University is high, with 13.3% classified as obese and 62.0% as overweight, making a combined prevalence of 75.3%. Several alternative explanations may account for this unusually high prevalence. First, reliance on Body Mass Index (BMI) as the primary measure may have contributed to overestimation, as BMI does not differentiate between fat mass and lean body mass. Second, the study setting—a private, urban, faith-based university—may expose students to dietary environments characterized by increased consumption of energy-dense foods and limited opportunities for physical activity. In addition, the demographic composition of the sample, including a higher proportion of female and senior-level students, may have influenced prevalence estimates, as these groups are known to have higher obesity risk. The result of this study is strikingly higher than both national and global student data. At the national level, Chukwuonye et al. (2020) in their systematic review of overweight and obesity in Nigeria reported a pooled adult prevalence of 25% for overweight and 14% for obesity, far below the 62.0% and 13.3% observed in this study. Similarly, Onubi et al. (2020) noted that among Nigerian adolescents and young adults, obesity prevalence rarely exceeded 15%, though urban areas tended to record higher rates. Beyond the university context, the findings have broader public health implications. The high prevalence underscores the need for obesity prevention strategies targeting young adults at the national level. Policy actions should include regulation of unhealthy food environments around tertiary institutions, integration of nutrition and physical activity education into youth-focused programs, and urban planning initiatives that promote active lifestyles. Early intervention among young adults is critical to reducing the future burden of non-communicable diseases in Nigeria.

This study revealed that the significant risk factors associated with obesity among undergraduate students at Al-Hikmah University include frequent fast-food consumption, low intake of fruits and vegetables, inadequate physical activity, poor sleep duration, family history of obesity-related diseases, limited accessibility to healthy food. The significant role of fast-food consumption identified in this study resonates with findings from global and regional literature. Studies have consistently shown that fast-food consumption is strongly linked to obesity due to high energy density, large portion sizes, and excessive sugar and fat content (Zhang et al., 2021). In Nigeria, (Ogunjimi and Akinola 2021) found that frequent patronage of fast-food outlets among students in Lagos was significantly associated with higher BMI, with students citing convenience, taste, and peer influence as reasons for their choices.

These findings suggest that enhancing knowledge through health education may play a vital role in obesity prevention among undergraduates.

The findings of this study revealed that risk factors have significant impact on the prevalence of obesity among undergraduate students of Al-Hikmah University, Ilorin, Kwara State. This agrees with the findings of Adeboye et al. (2020), who identified sedentary lifestyle, excessive consumption of fast food, and limited physical activity as major contributors to obesity among Nigerian university students. Overall, the findings suggest that obesity among undergraduates is driven by an interplay of knowledge gaps, behavioral practices, genetic predisposition, and environmental constraints.

Conclusion

This study assessed the knowledge, prevalence and risk factors of obesity among undergraduate students in Al-Hikmah University, Ilorin, Kwara State. The findings revealed that while students demonstrated a moderate level of knowledge about obesity, significant misconceptions still exist, particularly regarding its definition and prevention strategies. The prevalence of obesity was found to be very high, with over three-quarters of the respondents classified as either overweight or obese, highlighting an urgent public health concern within the university community. Key risk factors identified included frequent fast-food consumption, inadequate intake of fruits and vegetables, low levels of daily physical activity, poor sleep patterns, family history of obesity-related diseases, and limited accessibility to healthy food. This study, therefore, concluded that obesity among undergraduate students is influenced by a combination of lifestyle choices, environmental factors, and hereditary conditions. Addressing these challenges requires not only improving students' knowledge but also creating supportive environments that encourage healthy eating, regular physical activity, and adequate rest. If left unaddressed, the high prevalence of

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overweight and obesity observed could predispose students to serious health complications in the future, underscoring the need for urgent intervention by policymakers, health educators, and university authorities.

Recommendations

University Management should promote affordable healthy food options and Regular campus-wide fitness programs

Health Educators should design and implement regular awareness campaigns, seminars, and workshops to correct misconceptions about obesity and its prevention.

Policy Makers should integrate nutrition and obesity education into the undergraduate curriculum

Health Services Unit of the university should provide routine screening for BMI, blood pressure, and other obesity-related health indicators.

Students identified at risk should be referred for counseling

Parents and Guardians should encourage healthy eating habits from home

Students should take responsibility for their health by adopting better lifestyle choices

Public Health Impact

The high prevalence of overweight and obesity observed among undergraduate students at Al-Hikmah University indicates a growing burden of non-communicable disease risk in a population traditionally considered healthy and economically productive. This study highlights the role of modifiable lifestyle factors such as poor dietary habits, physical inactivity, inadequate sleep, and limited access to healthy food options in the development of obesity. Addressing these factors through targeted health promotion and preventive strategies can significantly reduce obesity-related morbidity and mortality. The demonstrated association between obesity knowledge and prevalence underscores the importance of effective health education in shaping positive health behaviors among students.

At an institutional level, the findings support the need for university-based public health interventions, including structured physical activity programs, nutrition education, and policies that promote healthy food environments on campus. More broadly, the study contributes to national public health data on obesity among young adults, informing policymakers and public health practitioners in the design of youth-focused obesity prevention programs. Early intervention among university students has the potential to curb the progression of obesity into adulthood, improve quality of life, and reduce the long-term economic and health burden on society.

Conflict of Interest

The author, Abdulhaleem YUSUF, declares that there is no conflict of interest regarding the publication of this manuscript.

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