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Research Article

Prevalence and Determinants of Overweight and Obesity Among Undergraduate Students in a Tertiary Institution Benin City, Edo State, Nigeria

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ABSTRACT

Background: Obesity is a growing public health problem globally, affecting people of all ages and socioeconomic backgrounds. Overweight and obesity is not just an underlying factor for major chronic diseases, it is also a serious debilitating condition on its own. **Aim:** This study aims to investigate the prevalence and determinants of overweight and obesity among undergraduate students in a tertiary institution in Benin City, Edo state, Nigeria. **Methods**: A descriptive cross-sectional design was used among 420 respondents. A well-structured questionnaire, weighing scale and calibrated meter rule was used as instrument for data collection. Data collected were analyzed using descriptive statistics and hypothesis tested using multiple logistic regression at 0.05 level of significant. **Result:** The result showed that the prevalence of overweight and obesity was 19.37% and only 30.0% of the respondent demonstrated a "High" level of knowledge of overweight and obesity and its associated factors. Factors associated with overweight and obesity include lack of time for physical exercise (3.15±0.13), Ignorance (2.56±0.86), Medications (such as antidepressant, anti-psychotics, corticosteroids, contraceptives (2.65±0.42), Physical enhancement (butt enlargement, breast enlargement, muscle growth, weight gain), (3.00±0.15). Multivariate logistic regression showed the odds of being overweight/obese is higher for females than male (OR = 2.14 p 0.004 CI 1.32-3.46), Individuals aged 21-25 have than those aged 15-20 (OR = 0.52, p0.010 CI 0.33-0.81), Married individuals compared to single individuals (OR; 2.94; p0.039 CI: 0.78-11.78. **Conclusion:** This study found a relatively high prevalence of overweight and obesity among undergraduate students in tertiary institution with few students demonstrating a strong understanding of weight management and related health issues. These findings suggest a need for targeted interventions to promote healthy weight management behaviors among undergraduate students.

Keywords: Overweight and Obesity, Prevalence, Determinants, Undergraduate students

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INTRODUCTION

The prevalence of overweight and obesity is on the increase worldwide, with serious public health implications. In the last three and half decades, the prevalence of obesity has increased steadily, with regard to the standard established by the World Health Organization (WHO) body mass index (BMI) categorization of obesity (WHO 2016). The steady increase in the prevalence of overweight and obesity is global and the rate of increase in African countries like Nigeria is not lower than that observed in developed countries of the world (WHO 2023, Templin et al, 2019). In 2016, the WHO reported that about 1.9 billion adults were overweight (using BMI classification) and about a third of these (650 million) were obese globally (NCD-RisC, 2017). The prevalence of overweight was 38% (9% among men and 40% among women), while the prevalence of obesity was 13% (11% among men and15% among women) in

adults aged 18 years and above in the WHO report (WHO 2016, Kassie et al, 2020, Jastreoff et al, 2019). Obesity is a major risk factor for a range of health problems, such as high cholesterol, hypertension, diabetes, respiratory problems (asthma), musculoskeletal diseases (arthritis), cancer which results in a progressive increase in mortality rate when the overweight threshold is crossed (WHO, 2020). The World Health Organization predicted that by 2030, 30% of death in the world will be caused by lifestyle diseases and can be controlled through appropriate identification and intervention on the associated risk factors and behavioral involvement policies. Therefore, early detection and diagnosis is crucial (Mahmood et al, 2021)

Overweight and obesity is not just an underlying factor for major chronic diseases, it is also a serious debilitating condition on its own (Muller et al, 2017). At least 2.8 million people die each year as a result of being overweight or obese. A report by the World Bank has predicted that in the next 15 years, the cost implication of Obesity, including healthcare and reduction in productivity, will amount to over $7 trillion in Nigeria and other developing countries which is approximately 2,716 trillion in naira (Adeolu et al, 2016). The direct or indirect cost of overweight and obesity in Nigeria is unknown but is expected to be enormous, bearing in mind the high prevalence of overweight and obesity in Nigeria and also considering the fact that Nigeria is the most populous black nation on the planet Earth (Adeloye et al, 2020).

The increased prevalence of obesity in Nigeria corresponds with rising levels of comorbidities, such as hypertension and diabetes mellitus which may result in death (Uloko et al, 2018). There is an urgent need at different the levels of government and other key stakeholders in Nigeria, including other African countries to Invest more in preventive, diagnostic, and treatment of obesity and its comorbidities. Although, several studies have been done to assess the prevalence of overweight and obesity, including its determinants, knowledge and associated factors, but very few studies have determined the behavior and life style practices associated with obesity among undergraduate students in Nigeria. Hence the study aims to assess the Prevalence and determinants of overweight and obesity among undergraduate students in a Tertiary institution in Benin City

MATERIAL AND METHODS

Research design/setting: this study will adopt a descriptive cross-sectional research design. The research was carried out in halls of residence of a Tertiary University in Benin City Edo state, Nigeria. The University two campuses, one in Ekehuan and one in Ugbowo with fifteen faculties including a central library called the John Harris Library. The University also has a total of 9 halls of residence for undergraduate students.

Target population/ Sample size/ Sample technique: The target population for this study were male and female undergraduate students in halls of Residence of the University. The population for each hall used for this study; Hall 1 = 1200, Hall 2 = 1920, Hall 3 = 1920, Hall 4 = 2000, Hall 5 = 120, Hall 6 = 320, NDDC = 696, Keystone = 100, Clinical hostel = 272. The population of students in the halls of residence was estimated to be 8350 students in total. The sample size was 420 determine using using the Taro Yamane formula ($n = N/(1+N(e)^2$). The study participants were selected using the non-probability convenience sampling technique.

Instrument for data collection: Three instruments were used for data collection in this study**.**

1. Questionnaire: A self-structured questionnaire was designed for the purpose of this study. The questionnaire was divided into 4 (four) sections; Section A: Contains the sociodemographic data of the respondent.. Section B: Contains questions assessing the knowledge and associated factors related to overweight and obesity. Section C: Contains items assessing the various behavior and lifestyle practices related to overweight and obesity. Section D: Consists of items assessing factors influencing the behavioral and lifestyle practices associated with overweight and obesity. **Mechanical weighing scale**: A mechanical weighing scale was used to take weight measurements before the completion of the questionnaires. Weight was measured to the nearest 0.5kg (kilogram) using a calibrated scale. **Measuring Tape:** The measuring tape to be used in this study is the Linagjin measuring tape. This measuring tape was made in China. This tape will be used to measure the height of the participants to the nearest meter (m).

Validity/ Reliability of instrument: The validity of the instrument and questionnaire were determined using face and content validity by expert in the field of nutrition and dietetics as well as a statistician. The questionnaire was examined in line with the stated objectives. The reliability of the questionnaire was tested using split half reliability test for its internal consistency in another school. The data collected were analyzed using Cronbach alpha, with value of 0.82, 0.79 and 0.76 respectively for section B, C and D

Method of data collection: Data were collected with the help of three research assistants who were trained on the research objective and purpose as well as how to take the respondents height and weight. After consents was obtained the questionnaires were administered to the respondents who took time to fill it and were collected immediately. After which the height and weight were measured using the measuring instrument. Height was measured to the nearest 0.1 cm using a measuring tape. Weight was measured to the nearest 0.5kg using a calibrated weighing scale.

Method of data analysis This study employed descriptive statistics such as mean, frequency, percentage and standard deviation distribution, while Inferential analysis such as multivariate logistics to test the research hypotheses at 0.05 level of significance. All analysis were done using Statistical Package for Social Science (SPSS) version 26.0 for windows.

Ethical consideration: Ethical approval with protocol number CMS/REC/2023/379 was obtained from the Research ethics committee of the University of Benin and due consent and permission were taken from the participants. Other ethical principles such as confidentiality, voluntary withdrawal were strictly adhere to.

RESULTS

Table 1: Sociodemographic characteristics of respondents

	Frequency (n=413)	Percentage
Gender		
Male	197	47.7
Female	216	52.3
Age (years)		
15-20	194	47.0
21- 25	147	35.6
26-30	62	15.0
31 and above	10	2.4
Level		
100L	106	25.7
200L	80	19.4
300L	69	16.7
400L	68	16.5
500L	58	14.0
600L	32	7.7
Marital status		
Single	403	97.6
Married	10	2.4
Religion		
Christian	382	92.5
Islam	31	7.5
Ethnicity		
Igbo	53	12.8
Yoruba	71	17.2
Hausa	8	1.9
Edo	277	67.1
Tiv	4	1.0
Hall of residence		
Hall 1	53	12.8
Hall 2	94	22.8
Hall 3	94	22.8
Hall 4	98	23.7
Hall 5	6	1.5
Hall 6	16	3.9
NDDC	34	8.2
Keystone	5	1.2
Clinical hostel	13	3.1

The sociodemographic characteristics of the respondents in this study were examined. The sample consisted of 197 (47.7%) male respondents and 216 (52.3%) female respondents. The majority of respondents were in the age group 15-20 (47.0%, n = 194), the highest number of respondents were in the 100L level (25.7%, n = 106).

Table 2: Anthropometric measurement of respondents

	Mean	**Standard deviation**
Height (m)	1.67	0.84
Weight (kg)	58.3	1.45
BMI (kg/m^2)	22.9	4.32
Distribution of height (m) of participants	**Frequency**	**Percentage**
<1.50	74	17.9
1.50 - 2.00	201	48.7
>2.50	138	33.4
Distribution of weight (kg) of participants	**Frequency**	**Percentage**
<57	112	27.1
58 - 60	277	67.1
>60	24	5.8
BMI distribution of respondents		
Range	**Frequency**	**Percentage**
Underweight ≤ 18.5	12	2.9
Normal 18.5- 24.9	321	77.7
Overweight 25.0-29.9	59	14.3
Obese ≥ 30	21	5.1

Anthropometric measurements of the respondents, including their height, weight, and body mass index (BMI). It reveals that the majority of participants (48.7%) fall within the height range of 1.50 to 2.00 meters, 277 (67.1%), fall within the weight range of 58 to 60 kilograms. 14.3% were overweight, and 5.1% were classified as obese.

Prevalence of overweight and obesity = $\frac{\text{number of overweight + obese}}{\text{Total respondent}} \times 100\%$

$= \frac{59 + 21}{413} \times 100$

=19.37%

Table 3: Knowledge of overweight and obesity and its associated factors among respondents

	Correct Answer	**Wrong Answer**
BMI means___	101(24.5)	312(75.5)
What is BMI?	245(59.3)	168(40.7)
How is BMI calculated?	203(49.2)	210(50.8)
What is the BMI range considered obese?	49(11.9)	364(88.1)
BMI of ___ is regarded as overweight	53(12.8)	360(87.2)
Which of the following factors can increase the risk of developing overweight and obesity?	81(19.6)	332(80.4)
Which of the following factors can contribute to emotional eating?	97(23.5)	316(76.5)
What type of food is most likely to contribute to overweight and obesity?	102(24.7)	311(75.3)
What is the primary method of preventing overweight and obesity?	93(22.5)	320(77.5)
Which of the following is a healthy way to incorporate physical activity into daily life?	111(26.9)	302(73.1)
What is the recommended amount of physical activity for adults to maintain a healthy weight?	62(15.0)	351(85.0)
What is the primary factor that contributes to overweight and obesity?	71(17.2)	342(82.8)
Which of the following is a contributing environmental factor to overweight and obesity?	59(14.3)	354(85.7)
The following are life style practices that increases the risk of overweight/obesity		
Eating balanced diet	153(37.0)	260(63.0)
Excessive alcohol consumption	148(35.8)	265(64.2)
Not exercising	259(62.7)	154(37.3)
Smoking	185(44.8)	228(55.2)
The following factors lead to obesity		
Genetics	81(19.6)	332(80.4)
Illnesses	189(45.8)	224(54.2)
Use of contraceptives	68(16.5)	345(83.5)
Lack of sufficient sleep	62(15.0)	351(85.0)
Grand mean responses		

Classification of Level of knowledge

	Frequency	Percentage
Low	206	49.9
Fair	83	20.1
High	124	30.0

The level of knowledge on overweight/obesity and its associated factors among the respondents showed that 49.9% have "Low" level of knowledge, 20.1% had a "Fair" level of knowledge, and 30.0% demonstrated a "High" level of knowledge. These percentages provide valuable insights into the distribution of knowledge levels among the participants in the study.

Table 4: Behavior and lifestyle practices related to overweight and obesity

Behavioral items statements	A	S	Sel	N	Mean	Remark
Consume sugary snacks, desserts, or sweets	206 (51.5%)	132 (33.0%)	68 (17.0%)	7 (1.8%)	3.30	Negative
Eat outside of your regular mealtimes or have irregular eating patterns	187 (46.8%)	112 (28.0%)	92 (23.0%)	22 (5.5%)	3.12	Negative
Engage in sedentary activities such as prolonged sitting or screen time (e.g., watching TV, using computers or smartphones)?	125 (31.2%)	139 (34.8%)	119 (29.8%)	30 (7.5%)	2.87	Negative
Consume high-calorie beverages such as soft drinks or energy drinks?	119 (29.8%)	142 (35.5%)	109 (27.3%)	43 (10.8%)	2.82	Negative
Engage in mindless eating (eating without paying attention to portion sizes or satiety cues)?	156 (39.0%)	147 (36.8%)	93 (23.2%)	17 (4.3%)	3.07	Negative
Engage in emotional eating (eating in response to stress, boredom, or other emotions)?	52 (13.0%)	79 (19.8%)	263 (65.8%)	19 (4.8%)	2.40	Negative
Eat meals while engaging in other activities such as watching TV or using electronic devices?	144 (36.0%)	139 (34.8%)	109 (27.3%)	21 (5.3%)	2.98	Negative
Skip meals, especially breakfast?	19 (4.8%)	69 (17.3%)	88 (22.0%)	237 (59.3%)	1.69	Positive
Eat larger portions when dining out with friends or family?	125 (31.2%)	149 (37.3%)	111 (27.8%)	28 (7.0%)	2.90	Negative
Consume high-calorie, high-fat, or sugary snacks late at night?	46 (11.5%)	85 (21.3%)	106 (26.5%)	176 (44.0%)	2.00	Positive
Consume alcoholic drinks	75 (18.8%)	88 (22.0%)	126 (31.5%)	124 (31.0%)	2.28	Positive

A=always (4), N=sometimes (3) SEL=seldom (2), N=never (1), Mean >2.50 for negative behaviors

The behavior and lifestyle practices related to overweight and obesity among the respondents showed respondents reported higher mean scores (2.57, 2.85, and 2.84) for engaging in mindless eating, emotional eating, and eating while engaging in other activities, respectively. These mean scores exceeded the threshold of 2.50, suggesting that these negative behaviors are more prevalent in this population. Skipping meals, especially breakfast, stood out with the highest mean score of 3.67, indicating a significant frequency of this negative behavior.

Table 5: Factors influencing the behavioral and lifestyle practices associated with overweight and obesity

	SD(1)	D(2)	A(3)	SA(4)	Mean	St.Dev	Remark
Lack of time for physical exercise	49 (9.8%)	39 (7.8%)	126 (25.2%)	199 (39.6%)	3.15	0.13	Factors
Peer influence/pressure to engage in unhealthy food habits	119 (23.8%)	115 (23.0%)	121 (24.2%)	58 (11.6%)	2.29	0.28	Non factors
Lack of resources/money to eat healthy	102 (20.4%)	122 (24.4%)	146 (29.2%)	43 (8.6%)	2.31	0.26	Non factors
Ignorance	112 (22.4%)	95 (19.0%)	69 (13.8%)	137 (27.4%)	2.56	0.84	Factors
Eating disorder (such as bulimia nervosa)	122 (24.4%)	98 (19.6%)	108 (21.6%)	85 (17.0%)	2.38	0.19	Non factors
Lack of access to healthy foods	112 (22.4%)	132 (26.4%)	108 (21.6%)	61 (12.2%)	2.29	0.36	Non factors
Inadequate sleep time	125 (25.0%)	95 (19.0%)	142 (28.4%)	51 (10.2%)	2.29	0.28	Non factors
Medications (such as antidepressant, anti-psychotics, corticosteroids, contraceptives)	75 (15.0%)	106 (21.2%)	119 (23.8%)	113 (22.6%)	2.65	0.42	Factors
Physical enhancement (butt enlargement, breast enlargement, muscle growth, weight gain)	35 (7.0%)	49 (9.8%)	211 (42.2%)	118 (23.6%)	3.00	0.15	Factors

Mean >2.50 positive factors

Factors influencing the behavioral and lifestyle practices associated with overweight and obesity. As examine in the study showed that lack of time for physical exercise (3.15±0.13), Ignorance (2.56±0.86), Medications (such as antidepressant, anti-psychotics, corticosteroids, contraceptives (2.65±0.42), Physical enhancement (butt enlargement, breast enlargement, muscle growth, weight gain), (3.00±0.15) were mostly factors influencing the behavioral and lifestyle practices associated with overweight and obesity among the respondents.

Table 6: Multivariate logistic regression associated sociodemographic characteristics and Overweight/obese

	Odds ratio	Upper	Lower	P
Sex				
Male	Reference	-	-	-
Female	2.14	1.32	3.46	0.004
Age				
15 – 20	Reference	-	-	-
21 – 25	0.52	0.33	0.81	0.010
26 – 30	1.34	0.73	2.43	0.053
Level				
100	Reference	-	-	-
200	1.04	0.61	1.77	0.920
300	1.22	0.69	2.17	0.623
400	0.66	0.35	1.24	0.311
500	3.91	2.03	7.54	0.000
600	2.22	0.91	5.42	0.149
Marital Status				
Single	Reference	-	-	-
Married	2.94	0.78	11.17	0.039
Divorced				
Religion				
Christian	Reference	-	-	-
Islam	0.25	0.08	0.71	0.003
Ethnicity				
Igbo	Reference	-	-	-
Yoruba	0.49	0.23	1.05	0.088
Hausa	0.53	0.10	2.84	0.512
Edo	0.51	0.25	1.03	0.012
Tiv				
Hall of Residence				
Hall 1	Reference	-	-	-
Hall 2	0.71	0.35	1.41	0.495
Hall 3	0.44	0.23	0.84	0.085
Hall 4	1.05	0.57	1.95	0.899
Hall 5	1.30	0.11	15.08	1.000
Hall 6	1.30	0.31	5.42	1.000
NDDC	1.47	0.61	3.54	0.706
Keystone	1.89	0.20	17.53	0.600
Clinical	1.51	0.48	4.73	0.680

The association of the sociodemographic characteristics and Overweight/obese using Multivariate logistic regression showed the odds of being overweight/obese for females are 2.14 times higher than for males (OR = 2.14 p 0.004 CI 1.32-3.46), Individuals aged 21-25 have 0.52 times lower odds of being overweight/obese compared to those aged 15-20 (OR = 0.52, p0.010 CI 0.33-0.81). Academic level also shows an association with overweight/obese status. Individuals at Level 500 have 3.91 times higher odds of being overweight/obese compared to those at Level 100 (OR 3.91, p< 0.001; CI 2.03-7.54). Married individuals have 2.94 times higher odds of being overweight/obese compared to single individuals (OR; 2.94; p0.039 CI: 0.78-11.78), suggesting a significant association between marital status and overweight/obese status. (Table 6)

DISCUSSION

Findings of this study showed that majority of the respondents had a normal BMI. However, the presence of overweight and obesity, affecting nearly 20% of the surveyed population, suggests that interventions promoting healthier lifestyles and nutritional education may be warranted. Campus health initiatives, such as nutrition education, physical activity programs, and access to healthier food options, could help address these concerns. Additionally, identifying determinants

of overweight and obesity, such as dietary habits and physical activity levels, can inform targeted strategies for prevention and management. Overall, these findings underscore the importance of promoting and supporting healthy lifestyles among undergraduate students to mitigate the potential health risks associated with excess weight. This findings aligns with the results of a study conducted by Stoś et al, (2022) in Poland, where a significant portion of the participants were found to be overweight, with 16.4% falling into the obese category. Similarly, a study by Stival et al. (2022) in Italy reported a prevalence of overweight (including obesity) of 22.4% among children aged 8–9 years and 14.4% among adolescents aged 11–15 years. The study noted a higher prevalence of overweight among males, children with higher birth weights, and those with obese parents. It was also observed that less physical activity was common among females and older adolescents. In contrast, Alao et al, (2022), reported low work-related stress levels among the majority of respondents in Ibadan.

Additionally, a study involving adolescent girls in Jutiapa, Guatemala, conducted by Parra et al. (2021), revealed prevalence rates of 9.9% for underweight and 15.6% for overweight/obesity. The higher prevalence of individuals with a normal BMI in the present study may be attributed to the active lifestyles of the students, often walking to class on campus and engaging in various activities. Additionally, the design of most residential halls in the study area, featuring flights of stairs, encourages daily exercise through stair climbing.

This study found that about half of the respondents had a poor level of knowledge. This finding holds several important implications. Firstly, the prevalence of poor knowledge levels among a significant portion of the respondents underscores the need for targeted health education and intervention programs. A substantial portion of respondents lacking adequate knowledge about overweight and obesity may not be fully aware of the importance of early prevention and intervention. Encouraging individuals to recognize the signs of excess weight and seek timely medical advice can help prevent the development of obesity-related health issues. This underscores the significance of raising awareness among the population. Addressing disparities in knowledge levels is essential for reducing health inequalities. In contrast to the findings of this research, Bellad et al (2018) who discovered that in Belgau a significant majority of the participants possessed accurate knowledge about various aspects of obesity.

However, a substantial 90% of the participants lacked knowledge regarding the correct consumption of fruits, vegetables, and the appropriate duration of exercise for maintaining good health. Meanwhile, in Portugal, Henriques et al (2020), reported that the majority of Portuguese-speaking residents recognized the benefits of physical activity, the risks associated with abdominal obesity, and most consequences of excessive weight, irrespective of their BMI. Nevertheless, knowledge gaps were evident concerning the prevalence of obesity, calorie-related information, and BMI diagnosis. Furthermore, Lithuania, Zelenyetè et al (2021), found that participants struggled to visually identify the correct body figure corresponding to individuals with obesity. While a majority of respondents recognized obesity as a risk factor for heart diseases and diabetes, their knowledge about other health conditions associated with excessive weight was limited. The fair level of knowledge observed in this study may be attributed to the fact that the study area was a university community where students might have acquired knowledge about overweight and obesity during certain phases of their education.

This finding regarding behavior and lifestyle practices related to overweight and obesity among the participants reveals a complex picture. While some positive behaviors were observed, such as motivation for physical activity, there were also concerning practices, including high consumption of sugary snacks and irregular eating patterns. Participants reported engaging in mindless and emotional eating, and a significant proportion engaged in sedentary activities. Additionally, the consumption of high-calorie beverages and alcoholic drinks was common. These findings suggest that there is room for improvement in adopting healthier behaviors, such as regular physical activity and mindful eating practices, to support weight management and overall health among the study population. Targeted interventions and health education programs may play a crucial role in addressing these behavior patterns and promoting healthier lifestyles. Likewise, in a multicenter investigation, Crovetto et al (2019), and Yun et al (2018) among Students in University Brunei Darussalam identified notable differences in dietary habits between obese and normal-weight students. Obese students exhibited lower consumption of healthy foods, a finding with statistical significance. Notably, underweight male participants displayed elevated consumption of unhealthy foods, while obese women had the lowest scores in this regard. Protective factors against being overweight or obese included a consumption pattern of at least two servings of vegetables (odds ratio [OR] = 0.5; 95% confidence interval [CI] 0.4–0.7), whereas risk factors encompassed the consumption of sugary soft drinks (more than one cup daily) (OR = 1.5; 95% CI 1.0–2.1) and male gender (OR = 1.8; 95% CI 1.3–2.4).

Syed et al, conducted a study in Saudi Arabia, revealing significant statistical associations between Body Mass Index (BMI) and various food consumption settings, such as dining at a table versus the Islamic practice of squatting on the ground ($p < 0.001$). BMI was also linked to students' dietary habits concerning eating food, snacks, and consuming carbonated beverages while watching television ($p < 0.001$) (Syed et al, 2020). Furthermore, the study found correlations between BMI and the consistent pattern of food and drink consumption while watching television or engaging in activities such as playing video games on mobile phones or computers ($p < 0.001$). Notably, a significant proportion of students lacked awareness regarding the health risks associated with obesity, including metabolic syndrome, reproductive disorders, respiratory disorders, liver, and gallbladder diseases (Syed et al, 2020).

In the United States, Dhana et al (2018), conducted research revealing that offspring's risk of developing obesity was substantially lower when their mothers maintained a healthy body mass index within the range of 18.5-24.9 (relative risk 0.44, 95% confidence interval 0.39 to 0.50), engaged in a minimum of 150 minutes per week of moderate/vigorous physical activity (0.79, 0.69 to 0.91), refrained from smoking (0.69, 0.56 to 0.86), and consumed alcohol moderately (1.0-14.9 g/day; 0.88, 0.79 to 0.99), in comparison to other cases. However, a high-quality diet in mothers (top 40% of the

Alternate Healthy Eating Index 2010 diet score) did not exhibit a significant association with offspring obesity risk (0.97, 0.83 to 1.12). Remarkably, when all healthy lifestyle factors were considered together, offspring of mothers adhering to all five low-risk lifestyle factors had a 75% lower risk of obesity than offspring of mothers not adhering to any low-risk factor (0.25, 0.14 to 0.47). This association remained consistent across various demographic groups and risk profiles in children. Importantly, children's lifestyles did not substantially influence the connection between maternal lifestyle and offspring obesity risk. However, when both mothers and offspring adhered to a healthy lifestyle, the risk of obesity decreased further (0.18, 0.09 to 0.37) (Dhana et al, 2018).

The study's findings reveal several factors significantly influencing behavioral and lifestyle practices associated with overweight and obesity among students. These factors encompass physical activity, dietary choices, and substance use behaviors. Students who reported experiencing fatigue easily during physical activities or post-exercise pain were less likely to engage in regular exercise, suggesting potential barriers related to fitness levels or motivation. Busy class schedules and a preference for taking cabs over walking also hindered physical activity. Unhealthy dietary practices included a preference for fast food, sugary snacks, processed fruit juices over whole fruits, and a dependence on soft drinks. Additionally, the association of smoking with satiety and alcohol with happiness pointed to misconceptions around substance use. In summary, the majority of the items yielded statistically significant mean values, suggesting a notable influence of these factors on behavioral and lifestyle practices related to overweight and obesity. Similarly, Abduelkarem et al (2020), observed significant findings in their study conducted in the United Arab Emirates, where a considerable proportion of participants exhibited high consumption rates of candies (54.6%) and fast food (47.8%). Furthermore, the study identified significant associations between participants' dietary habits, age, and the amount of time spent watching television with their body mass index (BMI). These consistent findings underscore the significance of these factors in shaping patterns of overweight and obesity and highlight the need for targeted interventions and health promotion efforts. These findings underline the need for multifaceted interventions that address these factors through campus-wide wellness programs, enhanced nutritional education, restricted availability of unhealthy snacks and beverages, smoking cessation programs, and mental health support. Collaborative efforts between academic departments can help integrate exercise into tight class schedules, ultimately promoting healthier lifestyles among students. Further research can refine interventions to address specific barriers and enhance their effectiveness.

CONCLUSION

This study found a relatively high prevalence of overweight and obesity among undergraduate students in tertiary institution with few students demonstrating a strong understanding of weight management and related health issues. The study identified several factors influencing weight status, including gender, age, and marital status. Females were more likely to be overweight or obese compared to males. Students aged 21-25 were less likely to be overweight or obese than their younger counterparts (15-20 years old). Interestingly, married students were more likely to be overweight or obese compared to single students. Behavioral factors associated with weight gain included mindless eating, emotional eating, and multitasking while eating. Limited time for exercise, lack of knowledge about healthy weight management, and use of certain medications were also identified as contributing factors. These findings suggest a need for targeted interventions to promote healthy weight management behaviors among undergraduate students in higher institutions. Educational programs focusing on nutrition and physical activity could be particularly beneficial. Additionally, initiatives that address the specific challenges faced by female students and students struggling with time management could be helpful in reducing overweight and obesity rates.

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