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Obesity Among University Students: Anthropometric Profile, Lifestyle Patterns, and Associated Factors

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Abstract

Obesity among university students represents an important public health concern because the transition to higher education may coincide with substantial changes in dietary habits, physical activity, sleep, stress, and daily routines. During this period, students may experience increased autonomy, academic pressure, financial limitations, irregular schedules, and reduced parental supervision, potentially influencing behaviours associated with weight gain. This academic essay discusses obesity among university students, emphasizing anthropometric characteristics, lifestyle patterns, and factors associated with excess body weight. The discussion

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addresses body mass index, waist circumference, dietary behaviours, physical activity, sedentary behaviour, sleep, alcohol consumption, mental health, academic demands, socioeconomic conditions, and the university environment. Obesity is understood as a multifactorial condition resulting from interactions between biological, behavioural, social, environmental, and economic determinants rather than as an individual failure. University institutions can therefore play an important role in prevention through healthy food environments, opportunities for physical activity, mental health support, health education, and policies that facilitate healthier choices. Understanding student profiles is essential for developing context-sensitive strategies that promote health during early adulthood and reduce the long-term burden of obesity and related chronic diseases.

Keywords: Obesity; University students; Anthropometry; Lifestyle; Public health.

1. Introduction

Obesity has become one of the most important public health challenges worldwide. Its prevalence has increased substantially over recent decades and affects populations across different ages, socioeconomic groups, and geographical regions. Excess body weight is associated with a wide range of health conditions, including cardiovascular diseases, type 2 diabetes, musculoskeletal disorders, several types of cancer, and psychological and social consequences. The growing prevalence of obesity therefore represents not only an individual health concern but also a major challenge for health systems and societies.

Young adulthood is a particularly relevant period for understanding the development of overweight and obesity. The transition from adolescence to adulthood is frequently accompanied by changes in residence, family relationships, educational responsibilities, employment, financial autonomy, and daily routines. University students may experience these changes simultaneously, often while adapting to a new social and academic environment. Such circumstances can influence food choices, physical activity, sleep, alcohol consumption, sedentary behaviour, and other health-related behaviours.

The university environment can have a significant influence on lifestyle patterns. Students may spend many hours sitting in classrooms, libraries, laboratories, or in front of computers. Academic schedules may interfere with regular meals and physical activity, while stress and insufficient sleep can influence appetite and behavioural regulation. At the same time, universities provide opportunities for health promotion because they bring large populations of young adults together within organized environments where policies and interventions can be implemented.

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Anthropometric assessment provides an important starting point for understanding obesity among university students. Body mass index is widely used to classify weight status at the population level, while measures such as waist circumference can provide additional information regarding central adiposity and cardiometabolic risk. However, anthropometric indicators should be interpreted carefully because they do not capture every dimension of body composition or health. A comprehensive assessment should therefore combine anthropometry with behavioural, social, psychological, and environmental information.

Lifestyle factors are particularly important in this context. Dietary quality, physical activity, sedentary behaviour, sleep, alcohol consumption, and stress may interact with one another to influence body weight. These behaviours do not occur independently. A student who sleeps poorly may experience greater fatigue and engage in less physical activity, while academic stress may encourage irregular eating or increased consumption of highly palatable foods. Understanding these interactions is essential for developing effective prevention strategies.

This academic essay discusses obesity among university students, focusing on anthropometric profile, lifestyle patterns, and associated factors. It approaches obesity as a multifactorial condition shaped by biological, behavioural, socioeconomic, psychological, and environmental influences. The discussion also examines the role of universities in creating healthier environments and emphasizes the importance of early prevention to reduce the future burden of obesity and chronic disease.

2. Methods

This study was developed as an academic essay based on a narrative and critical examination of scientific and institutional literature concerning obesity, overweight, anthropometric assessment, university students, physical activity, nutrition, sedentary behaviour, sleep, mental health, and social determinants of health. The discussion incorporates international guidelines, epidemiological evidence, systematic reviews, and scientific literature addressing obesity during adolescence and young adulthood.

The essay does not present original empirical data and does not constitute a systematic review. Its purpose is conceptual and argumentative, integrating different dimensions associated with excess body weight among university students. The references used to support the discussion are presented exclusively at the end of the text, without in-text citations, according to the requested structure. The reference list follows APA 7th edition standards.

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3. Development

Obesity among university students should initially be understood as part of a broader transition in health behaviours occurring during young adulthood. The university period frequently represents a movement toward greater independence and personal responsibility. Students begin making more autonomous decisions about food, physical activity, sleep, leisure, alcohol consumption, and healthcare. These decisions can establish behavioural patterns that persist beyond graduation and influence health during subsequent decades.

The transition to university may also involve substantial changes in living conditions. Some students move away from their families and become responsible for shopping, cooking, and managing household expenses for the first time. Others remain at home but experience changes in schedules and academic responsibilities. These different situations can influence food availability, meal regularity, physical activity, and opportunities for healthy routines.

Anthropometric assessment is fundamental for identifying patterns of overweight and obesity within student populations. Body mass index is calculated by dividing body weight in kilograms by height in metres squared and remains one of the most widely used measures for classifying weight status. Its advantages include simplicity, low cost, and applicability to large populations. However, BMI should not be interpreted as a direct measure of adiposity because it does not distinguish between fat mass and lean mass.

Waist circumference provides complementary information because abdominal adiposity is particularly associated with metabolic risk. Individuals with similar BMI values may have different distributions of body fat and therefore different cardiometabolic profiles. Including waist circumference or other measures of central adiposity can consequently improve the characterization of obesity-related risk among university students.

Anthropometric evaluation should also recognize differences according to sex, age, ethnicity, physical activity, and muscularity. A physically active student with substantial muscle mass may have a relatively high BMI without having excessive body fat. Conversely, an individual with a normal BMI may have a relatively high proportion of visceral or abdominal fat. Anthropometric measures should therefore be interpreted in combination rather than used as isolated determinants of health.

Dietary behaviour is one of the most frequently investigated factors associated with weight status among university students. The transition to independent living may increase consumption of fast food, processed foods, sugar-sweetened beverages, snacks, and meals eaten outside the home. At the same time, fruit, vegetable, whole-grain, and other nutrient-dense foods may be consumed less frequently when students face financial constraints or limited cooking facilities.

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The university food environment can reinforce these patterns. The availability, price, convenience, and visibility of foods and beverages influence choices. When healthier options are more expensive or less accessible than energy-dense alternatives, students may find it difficult to maintain healthy diets even when they possess adequate nutritional knowledge. Consequently, individual education alone may have limited impact if the surrounding food environment consistently promotes unhealthy choices.

Meal regularity is another relevant factor. Academic schedules can lead students to skip breakfast, delay meals, or eat at irregular times. Long periods without eating may be followed by larger meals or increased consumption of convenient snacks. Although meal frequency alone does not determine obesity, irregular eating patterns may interact with sleep deprivation, stress, and food availability to influence dietary quality and energy intake.

Physical activity is another essential component of energy balance and health. Regular physical activity contributes to cardiovascular fitness, muscular strength, metabolic health, mental well-being, and the prevention of chronic diseases. University students may have access to sports facilities, recreational programs, and active transportation opportunities, but participation varies substantially between individuals and institutions.

Academic demands can reduce opportunities for physical activity. Long periods of studying, examinations, laboratory activities, commuting, and assignments may increase sedentary time. Students may perceive physical activity as competing with academic responsibilities, particularly during periods of intense workload. Creating opportunities for movement within the academic environment may therefore be more effective than relying exclusively on students to exercise outside university hours.

Sedentary behaviour deserves separate attention from physical inactivity. A student may meet recommended levels of moderate-to-vigorous physical activity while spending many hours sitting during lectures, studying, gaming, or using digital devices. Prolonged sedentary time may represent an independent health concern. Strategies to reduce sitting time, such as active breaks, walking between activities, standing opportunities, and active transportation, can complement structured exercise.

Digital technology has transformed university life and may influence sedentary patterns. Computers, tablets, smartphones, streaming platforms, and online learning provide important educational and social benefits but can also increase screen exposure. Extended screen time may reduce opportunities for movement and may interfere with sleep when devices are used late at night. The objective should not be to eliminate technology but to promote balanced patterns of use.

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Sleep is closely connected to obesity and lifestyle. University students frequently experience irregular schedules, late-night studying, social activities, early classes, and extensive screen exposure. Insufficient or irregular sleep may influence appetite regulation, energy metabolism, mood, cognitive functioning, and physical activity. Students who sleep poorly may also rely more heavily on caffeine, energy drinks, snacks, and other easily accessible sources of stimulation.

Stress represents another relevant factor. University education can involve academic competition, financial concerns, uncertainty regarding employment, social adaptation, relationship problems, and pressure to perform. Chronic stress may influence eating patterns, sleep, physical activity, and emotional regulation. Some students may respond to stress through increased consumption of highly palatable foods, while others may experience appetite suppression or other changes in eating behaviour.

Mental health and obesity can interact in complex ways. Psychological distress may influence physical activity, dietary choices, sleep, and self-care. Conversely, obesity may contribute to body dissatisfaction, stigma, discrimination, low self-esteem, and social difficulties. These relationships are not necessarily causal in a single direction. Effective health promotion should therefore avoid simplistic explanations and consider the multiple pathways linking mental health and body weight.

Alcohol consumption can also influence energy intake and lifestyle patterns. Alcohol provides substantial energy and is frequently consumed in social contexts among university students. Drinking episodes may be accompanied by high-energy foods, disrupted sleep, and reduced physical activity. The relationship between alcohol and obesity is complex, but alcohol consumption should be considered when evaluating lifestyle patterns associated with excess body weight.

Socioeconomic conditions are fundamental to understanding student obesity. Although university students are often perceived as a relatively homogeneous group, they may differ substantially in family income, housing conditions, employment, financial independence, food security, and access to recreational opportunities. Students with limited financial resources may face greater difficulty purchasing healthier foods or accessing private physical activity facilities.

Food insecurity represents an especially important concern. Limited access to adequate and nutritious food can lead to unstable eating patterns and greater reliance on inexpensive, energy-dense foods. Food insecurity and obesity can coexist because economic constraints may favour foods that provide high energy at low cost. University health programs should therefore consider food access as part of obesity prevention.

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Family background can also influence lifestyle. Eating patterns, attitudes toward body weight, physical activity habits, and health beliefs are frequently shaped during childhood and adolescence. Students arrive at university with behavioural patterns already established, meaning that higher education is not necessarily the beginning of their health trajectories. Instead, it represents a period in which existing behaviours may be reinforced, modified, or replaced.

The social environment of university life can either facilitate or hinder healthy behaviours. Peer groups influence eating, alcohol consumption, leisure activities, and attitudes toward physical activity. Social norms can make certain behaviours appear desirable or expected. Conversely, friends can provide motivation, companionship, and accountability for physical activity and healthier routines.

Gender-related patterns may also influence obesity and lifestyle. Differences in body composition, physical activity preferences, dietary practices, social expectations, and body image may produce different profiles among male and female students. Such differences should be examined carefully without reinforcing stereotypes. Interventions should respond to actual behavioural and contextual patterns rather than assuming that all students have identical needs.

Body image deserves particular consideration among university populations. Concerns regarding appearance may motivate some students to adopt healthier behaviours but can also lead to restrictive diets, compulsive exercise, disordered eating, or psychological distress. Obesity prevention should therefore focus on health, functional capacity, and well-being rather than promoting unrealistic body standards.

The concept of healthy weight should likewise be approached carefully. Anthropometric indicators are useful for population monitoring and risk assessment, but they should not become instruments for stigmatizing individuals. Weight stigma can negatively affect mental health and may discourage people from seeking healthcare or participating in physical activity. Public health interventions should avoid moral judgments and recognize obesity as a complex chronic condition influenced by multiple determinants.

University institutions have an important opportunity to influence these determinants. Healthy food policies, affordable nutritious meals, water availability, active transportation infrastructure, recreational facilities, physical activity programs, mental health services, and health education can create environments that make healthier choices easier. Environmental interventions may have broader and more sustainable effects than strategies based exclusively on individual behaviour change.

Health promotion should also be integrated into academic life rather than treated as an optional extracurricular activity. Short active breaks, walking meetings,

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accessible sports programs, nutrition education, stress-management initiatives, and sleep-health campaigns can be incorporated into university routines. Such measures may benefit not only students with overweight or obesity but the entire university population.

Screening and early intervention can also play a role. Universities may develop health assessment programs capable of identifying students at increased cardiometabolic risk and directing them toward appropriate support. Such programs should prioritize confidentiality, informed consent, respectful communication, and voluntary participation. The purpose should be prevention and support rather than surveillance or discrimination.

The long-term relevance of student obesity should not be underestimated. Behaviours developed during young adulthood may persist into professional and family life. Excess weight acquired during this period may increase the duration of exposure to obesity-related metabolic risk. Early prevention therefore has the potential to reduce future morbidity while promoting healthy behaviours that benefit individuals throughout adulthood.

At the same time, interventions should recognize the diversity of university populations. International students, working students, students living alone, students with disabilities, students from rural areas, and students experiencing financial hardship may encounter different barriers to healthy living. Universal strategies should therefore be complemented by approaches sensitive to specific needs and circumstances.

A comprehensive approach to obesity among university students must consequently integrate anthropometric assessment with lifestyle and contextual information. Weight and waist circumference can identify patterns of risk, but they cannot explain why those patterns occur. Understanding diet, physical activity, sedentary behaviour, sleep, stress, alcohol use, mental health, socioeconomic conditions, and the university environment is necessary for developing interventions that address underlying determinants.

Ultimately, obesity prevention among university students should be framed as an investment in the health of future generations. Universities educate professionals who will influence society through their occupations, families, communities, and civic participation. Creating healthy educational environments can therefore produce benefits extending beyond individual students. A university that supports healthy eating, physical activity, mental well-being, adequate sleep, and social inclusion contributes to a broader culture of health.

4. Conclusion

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Obesity among university students is a multifactorial public health problem shaped by the interaction of anthropometric characteristics, dietary behaviour, physical activity, sedentary patterns, sleep, stress, mental health, alcohol consumption, socioeconomic conditions, family background, and the university environment. The transition to higher education represents an important period in which established behaviours may be reinforced or modified, making it an especially relevant opportunity for prevention. Anthropometric measures such as body mass index and waist circumference can help characterize risk, but they should be interpreted alongside behavioural and contextual information.

Effective prevention requires moving beyond approaches that place responsibility exclusively on individual students. Universities can contribute significantly by creating environments in which healthy choices are affordable, accessible, socially supported, and compatible with academic life. Integrated strategies involving nutrition, physical activity, reduced sedentary time, sleep, mental health, health literacy, and social support are more consistent with the multifactorial nature of obesity. Promoting healthy lifestyles during university years can strengthen health during adulthood, reduce future chronic disease risk, and contribute to healthier and more sustainable communities.

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