RGCS REVISTA GREGORIANA DE CIENCIAS DE LA SALUD

ISSN 3028-8940

ORIGINAL ARTICLE

JANUARY-JUNE 2026;3(1):136-146
https://doi.org/10.36097/rgcs.v3i1.3223

Lifestyle habits and nutritional status of a group of medical students in a student residence

Hábitos de vida y situación nutricional de un grupo de estudiantes de Medicina en una residencia estudiantil

Daliannis Rodríguez[1]*, Mei K. Wu[2]*, Jorge A. Fernández[1]

[1]*Universidad UTE, campus Manabí, Montecristi, Ecuador.*
[2]*Facultad de Tecnología de la Salud, Universidad de Ciencias Médicas de La Habana, Cuba.*

**Corresponding author*

Reception: 04-09-2025 *Acceptance:* 19-12-2025 *Publication:* 31-01-2026

ABSTRACT

The study analyzed the relationship between lifestyle habits and the nutritional status of Central American medical students, considering the influence of the diet provided in the student residence. Anthropometric indicators, lifestyle habits, and the quality of the offered menus were evaluated. The results showed a generally satisfactory nutritional status, moderate alcohol and tobacco consumption, and a significant level of physical activity, particularly among men. However, the diet provided did not fully match the students' dietary habits, showing a high intake of cereals, sugars, and fats, and a low frequency of fruits and vegetables, with menus that were poorly varied and nutritionally unbalanced. No significant association was found between lifestyle habits and nutritional status as measured by body mass index.

Keywords: lifestyle habits, nutritional status, university students, dietary adaptation, diet quality.

RESUMEN

El estudio analizó la relación entre los hábitos de vida y el estado nutricional de estudiantes centroamericanos de medicina, considerando la influencia de la dieta ofertada en la residencia estudiantil. Se evaluaron indicadores antropométricos, hábitos de vida y la calidad de los menús ofertados. Los resultados mostraron un estado nutricional generalmente satisfactorio, consumo moderado de alcohol y tabaco, y práctica significativa de actividad física, especialmente en los hombres. Sin embargo, la dieta ofrecida no coincidió plenamente con las costumbres alimentarias de los estudiantes, presentando alta ingesta de cereales, azúcares y grasas, y baja frecuencia de frutas y vegetales, con menús poco variados y desequilibrados. No se encontró asociación significativa entre los hábitos de vida y el estado nutricional medido por el índice de masa corporal.

Palabras clave: estilos de vida, estado nutricional, estudiantes universitarios, adaptación alimentaria, calidad de la dieta.

Cite as: Rodríguez, D., Wu, M. K., & Fernández, J. A. (2026). Lifestyle habits and nutritional status of a group of medical students in a student residence. *Revista Gregoriana de Ciencias de la Salud*, *3*(1), 136-146. https://doi.org/10.36097/rgcs.v3i1.3223

INTRODUCTION

The maintenance, development, and optimal functioning of the human body depend largely on adequate nutrition, capable of providing the energy and nutrients necessary to support the body's metabolic, structural, and regulatory processes. Healthy nutrition is based on the balanced consumption of foods that provide macronutrients—proteins, carbohydrates, and lipids—as well as essential micronutrients, such as vitamins and minerals, in addition to bioactive compounds with antioxidant activity found primarily in fruits and vegetables (FAO & WHO, 2019). Proteins, in particular, play a central role in cell turnover and tissue synthesis, while energy-rich foods ensure the essential caloric supply for carrying out vital biological functions (Gropper et al., 2017).

One of the primary objectives of any dietary system is to ensure an adequate nutritional status that allows the body to adapt to physiological and environmental demands, promoting health, physical and intellectual performance, and disease prevention (Raymond & Morrow, 2021). In this context, nutrition not only acts as a biological determinant of health but also as a key factor in the processes of human adaptation to new social and cultural environments (Forbes-Hernández et al., 2021).

Adaptation is a vital process inherent to all living beings and represents an essential mechanism for survival and evolution. In the case of humans, this process is conditioned by multiple factors, including the physical environment, dietary patterns, and lifestyle habits, as well as cultural, social, and religious aspects related to food (FAO & Alliance of Bioversity International and CIAT, 2021). Abrupt changes in the environment and diet can generate temporary or persistent alterations in nutritional status, especially in young populations undergoing international academic mobility.

The frequent consumption of junk food among university students, particularly those residing in student accommodations, reflects time constraints, academic stress, and limited access to balanced meals, factors that may negatively influence their nutritional status and long-term health outcomes (Gallardo & García, 2024). Differences in consumption patterns, meal times, and types of food can directly influence the nutritional status and overall well-being of students. The objective of this study was to analyze the relationship between lifestyle habits and nutritional status

of a group of Central American medical students, considering the influence of the diet offered by the student residence on said nutritional status.

METHODOLOGY

A descriptive study was conducted in which the sample size was determined using an attribute inspection sampling plan (NC ISO 2859-1, 2003). Participants were selected randomly. Anthropometric measurements of weight and height were taken from the participants. Body weight was determined using a technical scale with an accuracy of ±0.1 kg, with subjects barefoot and wearing as little clothing as possible, and was expressed in kilograms. Height was measured using a rigid measuring tape attached to the scale and was expressed in meters. From these data, the body mass index (BMI) was calculated.

A validated lifestyle survey was administered, which included sociodemographic variables, tobacco and alcohol consumption, physical activity, presence of diseases, medication use, and weekly frequency of consumption of different food groups.

The dietary assessment of the food offerings was conducted by compiling menus for a 15-day cycle. The nutritional evaluation of the menus considered the preparation methods and portion sizes offered to the students. Data processing was performed using CERES version 1.02, yielding the energy and nutrient values provided by each menu. Nutritional adequacy was determined using the weighted recommendations for the Cuban population aged 18 to 60.

The data obtained from the surveys and dietary analysis were coded and organized in a Microsoft Excel database and subsequently analyzed using Statistics for Windows version 6.1. Descriptive statistics, percentage comparison tests based on the binomial normal approximation, one-way ANOVA to assess the effect of lifestyle habits on BMI, and Spearman's rank correlation coefficient to analyze associations between discrete variables were applied. In all analyses, a significance level of 5% was adopted ($p \leq 0.05$).

RESULTS AND DISCUSSION

The study was conducted in a university student residence and included all resident students (n = 57), all enrolled in their first year of study, and primarily from Central American countries. The age distribution showed a predominance of young students, with 34 students (59.6%) in the

18–19 age group, 14 students (24.6%) older than 19, and 9 students (15.8%) younger than 18 (Figure 1). This age structure is consistent with the typical age of entry into higher education in Latin America and with the admission criteria of international medical training programs.

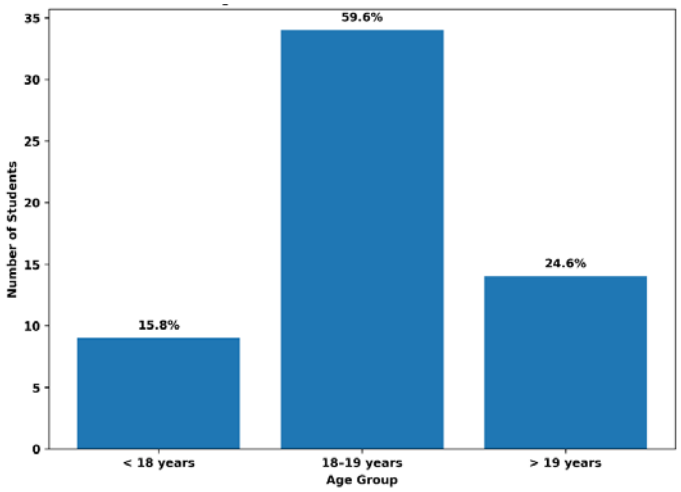

Figure 1. Percentage distribution of students by age group (n = 57).

Other studies have reported that university populations tend to cluster around age groups similar to the transition to early adulthood (18–24 years), a period in which lifestyle habits are consolidated (Public Health Nutrition Study, 2010). In a study of nearly 1,000 students in Spain, the mean age was 21.5 years, and physical activity and alcohol consumption also varied by gender (Moreno-Gómez et al., 2012). This suggests that the demographic profile of the residence hall students reflects global trends observed in university settings.

From a demographic perspective, the population consisted of 33 males (57.9%) and 24 females (42.1%). Anthropometric characteristics showed similar values between sexes, with heights and weights comparable to those reported for mixed-race youth populations in regional and Cuban reference areas. Table 1 summarizes the main anthropometric indicators.

Table 1. Descriptive statistics of height, weight, and BMI by sex in resident students (n= 57)

Indicator	Male (n = 33)	Female (n = 24)
Height (m)	1,72 ± 0,06	1,69 ± 0,06
Weight (kg)	69,4 ± 9,6	69,1 ± 9,1
BMI (kg/m^2)	23,4 ± 2,9	24,2 ± 3,2

Mean standard deviation.

The mean BMI values fell within the normal weight range according to the WHO, although close to the upper limit, suggesting an emerging trend toward overweight, more pronounced in females. Two students (3.5%) were identified as underweight, eight students (14.0%) as overweight, and no cases of obesity, indicating that, from an anthropometric perspective, the overall nutritional status of the population is satisfactory, although with early signs of nutritional risk.

This anthropometric profile is comparable with international evidence showing that, although many university students maintain a BMI within normal ranges, a considerable percentage are overweight or obese. For example, a study with students from different academic years reported that approximately 36% were overweight or obese, which is associated with poor dietary habits and lifestyles (Sprake et al., 2018; Al-Awwad et al., 2021). These patterns suggest that even when the average BMI falls within the normal range, there is an underlying risk of developing overweight if dietary and physical activity habits are not improved.

The analysis of lifestyle habits included tobacco and alcohol consumption, physical activity levels, and the presence of reported illnesses. A high frequency of unhealthy habits was observed, particularly among males, although also relevant in females (Figure 2). Of all students, 16 (28.1%) reported smoking, and 29 (50.9%) reported consuming alcoholic beverages regularly or occasionally. Among males, 9 of 33 (27.3%) smoked, and 17 (51.5%) consumed alcohol, while among females, 7 of 24 (29.2%) smoked and 12 (50.0%) consumed alcoholic beverages.

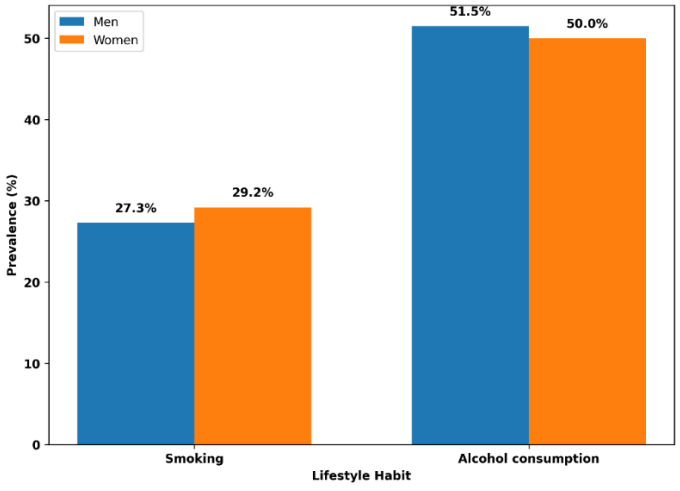

Figure 2. Prevalence of tobacco and alcohol consumption by sex (n= 57).

The high prevalence of these habits is concerning, considering that these are health sciences students and that the residential environment fosters the consolidation of behaviors that can persist into adulthood. These behaviors are well-established risk factors for cardiovascular and metabolic diseases. The prevalence of tobacco and alcohol use among students is a documented global phenomenon in various university populations. In a Spanish cohort of nearly one thousand students, 35.9% smoked and more than 80% consumed alcohol, with patterns associated with other lifestyle behaviors (Moreno-Gómez et al., 2012). Another Catalan university study found an alcohol use prevalence of over 96% and tobacco use in approximately 30% of students (Hernández-González et al., 2018). These studies indicate that alcohol and tobacco consumption among university students is comparable to, or even higher than, that observed in student residences, reinforcing the need for educational and health promotion interventions in these settings.

Regarding physical activity, 37 students (64.9%) reported participating in some type of sport, with a significantly higher proportion among males (25 of 33; 75.8%) than females (12 of 24; 50.0%) (Table 2). Soccer was the most popular sport, followed by athletics, consistent with regional cultural patterns.

Table 2. Physical activity among student residents by sex

Sex	Practices sport n (%)	Does not practice n (%)
Male	25 (75,8)	8 (24,2)
Female	12 (50,0)	12 (50,0)
Total	37 (64,9)	20 (35,1)

Regarding reported morbidity, 7 students (12.3%) reported having an illness, all male, primarily asthma and allergic rhinitis, and were under pharmacological treatment. The remaining population (87.7%) was considered apparently healthy. Physical activity is a protective factor for health, and its prevalence in this residence hall is consistent with international studies. In the aforementioned Spanish cohort, 54% of students engaged in physical activity, with variations by gender (Moreno-Gómez et al., 2012). Similarly, a Catalan study reported that 75.5% of participants were physically active (Hernández-González et al., 2018). These patterns indicated an active participation in sports or physical exercise and reinforced the idea that many university students

recognize the importance of physical activity, although subgroups with low adherence still exist.

The qualitative analysis of the menus offered at the residence revealed that, although the three basic food groups (energy-providing, restorative, and regulatory) were included, there was little variety, repetitive breakfasts and snacks, and a low presence of fruits, fresh vegetables, and fish. The quantitative analysis showed overcompliance with total energy and the macronutrients protein and lipids, with an insufficient intake of complex carbohydrates. Table 3 summarizes the average consumption and its nutritional adequacy.

Table 3. Adequacy of average energy and macronutrient consumption in the menus offered

Nutrient	Mean	Adequacy (%)
Energy (kcal)	2796,9	113,7
Proteins (g)	110,2	148,9
Carbohydrates (g)	390,8	93,5
Lipids (g)	86,2	156,7

This dietary pattern indicates an imbalance in energy distribution, characterized by an excess of protein and fat—primarily of animal origin—and a relative deficiency of complex carbohydrates and dietary fiber, which could contribute to metabolic alterations in the medium and long term. The observed dietary patterns align with international scientific evidence documenting similar trends in university populations. Research in Catalonia shows that students report a low consumption of vegetables, fruits, and grains, accompanied by a high consumption of meat and high-fat products (Sánchez & Aguilar, 2014). Furthermore, an analysis of eating habits in students in the United Kingdom found that a significant proportion followed poor dietary patterns, with implications for long-term health (Sprake et al., 2018). These observations support concerns about the nutritional quality of menus offered in university residences, where high-calorie options low in essential nutrients may predominate.

Regarding micronutrients, excesses of vitamins A and C were observed, while vitamin E and several B vitamins (niacin, pyridoxine, and folic acid) were insufficient. Likewise, the minerals calcium, iron, phosphorus, and copper showed values above the recommended levels, especially phosphorus and copper (Table 4). These imbalances are directly associated with the low availability of leafy green vegetables, a variety of fruits, and plant-based foods, as well as the high proportion of animal products in the menus. Statistical analysis showed no significant differences

in mean BMI values based on the presence or absence of habits such as smoking, alcohol consumption, participation in sports, or having a disease ($p > 0.05$).

Table 4. Summary of compliance with selected vitamins and minerals

Micronutrient	Status
Vitamin A	Excess
Vitamin C	Excess
Vitamin E	Partial deficiency
B Complex	Partial deficiency
Calcium and iron	Adequate–Excess
Phosphorus and copper excess	Excess

Likewise, no significant correlations were identified between BMI and the frequency of consumption of the main food groups. These results suggest that, in this young population, the negative effects of lifestyle and dietary habits are not yet clearly reflected in anthropometric nutritional status, although they could become apparent later if the observed patterns are maintained.

This lack of association may be explained by the fact that many effects of lifestyle habits on anthropometric nutritional status can manifest themselves in the longer term, outside the time frame of a cross-sectional study. Similar studies have found that, although habits such as smoking and alcohol consumption are related to dietary patterns and physical activity, their association with BMI is not always statistically clear in young samples (Moreno-Gómez et al., 2012). This suggests that early interventions should prioritize modifying habits before they manifest as more evident physiological alterations.

Overall, the resident students present a generally adequate anthropometric nutritional status, but maintain unhealthy lifestyle habits and eating patterns, characterized by a high prevalence of alcohol and tobacco consumption, low fruit and vegetable intake, and unbalanced diets with excess protein and fat. These findings highlight the need for nutritional and educational interventions in the residential setting, aimed at improving the quality of menus and promoting healthy lifestyles before chronic risk factors become established.

CONCLUSIONS

The study showed that the Central American students generally presented an adequate nutritional status according to body mass index, with a predominance of normal weight and no cases of malnutrition or obesity, despite moderate alcohol and tobacco consumption and significant participation in physical activities. However, deficiencies in dietary habits were identified, associated with the poor suitability of institutional menus to the students' cultural customs, characterized by a low dietary variety, limited consumption of fruits, vegetables, and fish, and possible micronutrient deficiencies and imbalances in protein intake. No significant association was found between lifestyle habits and nutritional status as measured by body mass index, suggesting the need to improve the nutritional quality of the diet offered and to use complementary indicators in future research.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

AUTHOR CONTRIBUTIONS

Conceptualization: Mei Kim Wu. **Data curation:** Mei Kim Wu and Jorge A. Fernández. **Formal analysis:** Daliannis Rodríguez, Mei Kim Wu, and Jorge A. Fernández. **Investigation:** Daliannis Rodríguez, Mei Kim Wu, and Jorge A. Fernández. **Methodology:** Daliannis Rodríguez. **Software:** Daliannis Rodríguez and Mei Kim Wu. **Supervision:** Jorge A. Fernández. **Validation:** Mei Kim Wu. **Visualization:** Daliannis Rodríguez. **Writing – original draft:** Daliannis Rodríguez, Mei Kim Wu, and Jorge A. Fernández. **Writing – review & editing:** Daliannis Rodríguez and Jorge A. Fernández.

REFERENCES

Al-Awwad, N. J., Al-Sayyed, H. F., Zeinah, Z. A., & Tayyem, R. F. (2021). Dietary and lifestyle habits among university students at different academic years. *Clinical Nutrition ESPEN*, *44*, 236–242. https://doi.org/10.1016/j.clnesp.2021.06.010

FAO and Alliance of Bioversity International and CIAT (2021). *Indigenous Peoples' food systems: Insights on sustainability and resilience in the front line of climate change*. Rome. https://doi.org/10.4060/cb5131en

Food and Agriculture Organization of the United Nations & World Health Organization. (2019). *Sustainable healthy diets: Guiding principles*. FAO. https://www.fao.org/3/ca6640en/ca6640en.pdf

Forbes-Hernández, T. Y., Betancourt, G., Bilbao, T., Rodríguez, D., García, M. A. (2021). Estimación de la calidad antioxidante de la dieta de estudiantes universitarios mexicanos. *QhaliKay*, *5*(2), 30-41. https://doi.org/10.33936/qkrcs.v5i2.3494

Gallardo, W. D., & García, M. A. (2024). Junk food: analysis of risks, benefits, and social perception. *Journal of Food Science and Gastronomy*, *2*(1), 26-34. https://doi.org/10.5281/zenodo.13996283

Gropper, S. S., Smith, J. L., & Carr, T. P. (2017). *Advanced nutrition and human metabolism* (7th ed.). Cengage Learning.

Hernández-González, V., Arnau-Salvador, R., Jové-Deltell, C., Mayolas-Pi, C., & Reverter-Masia, J. (2018). Physical activity, eating habits and tobacco and alcohol use in students of a Catalan university. *Revista de la Facultad de Medicina*; *66*(4), 537-541. https://doi.org/10.15446/revfacmed.v66n4.61896

Moreno-Gómez, C., Romaguera-Bosch, D., Tauler-Riera, P., Bennasar-Veny, M., Pericas-Beltran, J., Martinez-Andreu, S., & Aguilo-Pons, A. (2012). Clustering of lifestyle factors in Spanish university students: The relationship between smoking, alcohol consumption, physical activity and diet quality. Public Health Nutrition, 15(11), 2131–2139. https://doi.org/10.1017/S1368980012000080

Raymond, J. L., & Morrow, K. (2021). *Krause and Mahan's Food & the nutrition care process* (15th ed.). Elsevier.

Sánchez, V., & Aguilar, A. (2014). Hábitos alimentarios y conductas relacionadas con la salud en una población universitaria. *Nutrición Hospitalaria*, *31*(1), 449–457. https://doi.org/10.3305/nh.2015.31.1.7412

Sprake, E. F., Russell, J. M., Cecil, J. E., Cooper, R. J., Grabowski, P., Pourshahidi, L. K., & Barker, M. E. (2018). Dietary patterns of university students in the UK: A cross-sectional study. *Nutrition Journal*, *17*(1), 90. https://doi.org/10.1186/s12937-018-0398-y

World Health Organization. (2023). *Healthy diet*. https://www.who.int/news-room/fact-sheets/detail/healthy-diet

Disclaimer / Editor's Note: All publications' statements, opinions, and data are solely those of the individual authors and contributors, not *Revista Gregoriana de Ciencias de la Salud* or the editors. *Revista Gregoriana de Ciencias de la Salud* and/or the editors disclaim all responsibility for any injury to persons or property resulting from any ideas, methods, instructions, or products referred to in the content.