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PREVALENCE OF OVERWEIGHT AND OBESITY AND SELECTED CHARACTERISTICS AMONG SECONDARY SCHOOL STUDENTS AT THE INTERNATIONAL SCHOOL OF HO CHI MINH CITY (ISHCMC)

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ABSTRACT

Background: Overweight and obesity among children and adolescents are rapidly increasing and have become a major global public health concern, including in Vietnam. This condition not only affects physical development but also increases the risk of chronic diseases and negatively impacts psychological well-being. In urban settings, particularly in international school environments, the risk may be higher due to sedentary lifestyles and dietary changes. This study aimed to determine the prevalence of overweight and obesity and to describe selected characteristics among secondary school students at the International School of Ho Chi Minh City (ISHCMC).

Methods: A cross-sectional study was conducted among 151 students aged 11–15 years. Anthropometric measurements, including weight and height, were obtained using standardized procedures, and body mass index (BMI) was calculated. Nutritional status was classified according to the WHO 2007 growth reference using BMI-for-age Z-scores. Data were analyzed using STATA version 14.0. Descriptive statistics were used, and statistical significance was set at $p < 0.05$.

Results: The overall prevalence of overweight and obesity was 33.1%, including 19.9% overweight and 13.2% obesity. The mean BMI was 21.1 ± 4.5 kg/m^2. Male students had significantly higher mean weight and height compared to females ($p < 0.05$), while no significant difference in BMI was observed between sexes. The prevalence of overweight and obesity was higher in males than in females.

Conclusions: The prevalence of overweight and obesity among secondary school students in an international school setting is relatively high, reflecting a clear nutritional transition. Early interventions targeting school environments are necessary to address this issue.

Keywords: Overweight, obesity, students, BMI.

1. INTRODUCTION

Overweight and obesity among children and adolescents have increased rapidly and are now recognized as major global public health challenges. In recent decades, the prevalence has risen not only in developed countries but also in developing nations, including Vietnam.

Childhood overweight and obesity adversely affect physical development and increase the risk of chronic conditions such as hypertension, type 2 diabetes, and dyslipidemia at an early age. In addition, they negatively impact psychological well-being, reducing self-esteem and quality of life.

In Vietnam, rapid urbanization and lifestyle changes have contributed to an increasing prevalence of overweight and obesity, particularly in major cities. Students in international school settings may be at higher risk due to higher socioeconomic status, diverse dietary patterns, and sedentary behaviors. However, evidence regarding this population remains limited.

Therefore, this study aimed to determine the prevalence of overweight and obesity and to describe selected characteristics among secondary school students at the International School of Ho Chi Minh City (ISHCMC).

2. METHODS

2.1. Study design and setting

A cross-sectional study was conducted in 2025 at the International School of Ho Chi Minh City (ISHCMC).

2.2. Participants

The study included students aged 11–15 years who were enrolled at the school. All eligible students present at the time of data collection and who provided consent, along with parental/guardian approval, were included. Students with incomplete data were excluded.

2.3. Sample size and sampling

A total of 151 students were included using a census sampling approach.

2.4. Variables and measurements

The primary outcome was overweight and obesity status. Independent variables included age and sex.

Body mass index (BMI) was calculated as weight (kg) divided by height squared (m^2). Nutritional status was classified according to the WHO 2007 growth reference using BMI-for-age Z-scores into normal, overweight, and obese categories.

2.5. Data analysis

Data were entered, cleaned, and analyzed using STATA version 14.0. Continuous variables were presented as

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mean ± standard deviation, while categorical variables were summarized using frequencies and percentages. Statistical significance was defined as $p < 0.05$.

2.6. Ethical considerations

Participation was voluntary with informed consent obtained from students and their parents or guardians. Data confidentiality was maintained, and the study did not involve any intervention or harm to participants.

3. RESULTS

Table 1. General characteristics of study participants (n = 151)

Characteristics	n	%
Sex		
Male	88	58.3
Female	63	41.7
Nationality		
Vietnamese	105	69.5
Other	46	30.5
Age (years)		
11	11	7.3
12	13	8.6
13	59	39.1
14	40	26.5
15	28	18.5

Interpretation: Table 1 shows that male students accounted for a higher proportion than females (58.3% vs. 41.7%). The majority of students were Vietnamese (69.5%). The largest age group was 13 years (39.1%), followed by 14 years (26.5%).

Table 2. Anthropometric characteristics of students by sex (n = 151)

Variable			
Total (Mean ± SD)	**Male (Mean ± SD)**	**Female (Mean ± SD)**	**p-value**
Weight (kg)			
56.7 ± 15.5	59.2 ± 17.4	53.2 ± 11.6	0.013
Height (cm)			
162.9 ± 8.8	165.2 ± 9.3	159.8 ± 7.0	< 0.001
BMI (kg/m^2)			
21.1 ± 4.5	21.4 ± 4.8	20.8 ± 4.0	0.383

Interpretation: Table 2 indicates that male students had significantly higher mean weight and height compared to female students ($p < 0.05$). However, there was no statistically significant difference in mean BMI between males and females.

Table 3. Nutritional status of students according to WHO 2007

Nutritional status	n	%
Non-overweight/obese	101	66.9
Overweight	30	19.9
Obesity	20	13.2
Total overweight/obesity	50	33.1
Total	151	100

Interpretation: Table 3 shows that the overall prevalence of overweight and obesity was 33.1%, of which 19.9% were overweight and 13.2% were obese.

Table 4. Distribution of overweight and obesity by demographic characteristics

Characteristics			
Overweight–Obesity (n, %)	**Non–Overweight–Obesity (n, %)**	**PR (95% CI)**	**p-value**
Age (mean)			
13.12	13.54	0.69 (0.50–0.95)	0.024
Sex			
Female			
16 (25.4%)	47 (74.6%)	1	0.058
Male			
34 (38.6%)	54 (61.4%)	2.05 (0.97–4.32)	
Nationality			
Vietnamese			
36 (34.3%)	69 (65.7%)	1	0.658
Other			
14 (30.4%)	32 (69.6%)	0.35 (0.31–1.50)	

Interpretation: Table 4 shows a statistically significant difference in mean age between the two groups ($p = 0.024$), with the overweight/obese group tending to be younger. No statistically significant differences were observed for sex or nationality ($p > 0.05$).

4. DISCUSSION

The findings indicate that the prevalence of overweight and obesity among secondary school students at ISHCMC is relatively high compared to other studies in Vietnam. This may reflect differences in socioeconomic status and living environments.

Urbanization has contributed to increased consumption of energy-dense foods and reduced physical activity, thereby increasing the risk of overweight and obesity. The higher prevalence among males may be associated with behavioral and perceptual differences regarding weight control.

Additionally, the international school environment, characterized by academic pressure and increased screen time, may contribute to sedentary behavior and increased obesity risk.

5. CONCLUSIONS

The prevalence of overweight and obesity among secondary school students at ISHCMC is high, particularly among males.

6. RECOMMENDATIONS

School-based interventions focusing on nutrition and physical activity should be implemented to address overweight and obesity among students.

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