

Anthropometric indicators of adiposity and diet related with sleep quality in Ecuadorian adults

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Background and objectives:

The implications on inadequate sleep in the development of overweight and obesity have been strongly evidenced. Previous studies indicate that sleep deprivation results in changes in the levels of some hormones including leptin, ghrelin, insulin, cortisol and growth hormone that contribute to energy imbalance, which in the long term is related to diseases such as hypertension, metabolic, type 2 diabetes and hypercholesterolemia. The aim of the present study was to examine the relationship between sleep quality and overweight-obesity and diet in a sample of Ecuadorian adults.

Methodology:

Two hundred adults (34.5 ± 6.2 years; 30% female) were recruited from the Nutrition Service from the general Hospital “Pedro Carbo” in Guayaquil-Ecuador. Obesity parameters (BMI, waist circumference and fat mass percentage), diet (24-hour recall) and sleep quality (Pittsburgh Sleep Quality Questionnaire) were evaluated. Patients were categorized into two groups as a function of their sleep quality: Good (GSQ) and Poor sleep quality (PSQ). The potential relationships sleep quality, obesity, and diet were determined by ANCOVA adjusted by gender, age and physical activity level using STATA software.

Results and conclusions:

Significant relationships between sleep quality, obesity measures and diet were found. Adults with **poor sleep quality** had higher body weight ($p < 0.001$), higher BMI ($p < 0.001$), higher waist circumference ($p = 0.023$), higher fatty mass percentage ($p < 0.001$), and they showed a higher intake of energy ($p < 0.001$), carbohydrates ($p = 0.023$) and fat ($p = 0.021$) than adults with a **good sleep**

quality. These results show that poor sleep quality could be an important risk for the development of overweight and obesity. This could be related to the fact that a higher intake of energy and carbohydrates and fat was observed in individuals who showed a poor sleep quality. Our results support the hypothesis of the metabolic implications of inadequate rest, so it is recommended to take this into account as part of an appropriate healthy style.

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