

A Comprehensive Evaluation of Predictors of Acute Weight Gain: A Case-Control Study in the Veteran Population

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Objectives

- Describe and analyze a cohort of patients who experienced acute weight gain
- Examine the association between acute stressors and weight gain
- Examine the association between risk factors for obesity with weight gain
- Examine the relationship between lab values involved in the pathophysiology of obesity with weight gain

Introduction

- Obesity is a complex, multifactorial disease associated with numerous health conditions that increase individuals' risk of morbidity and mortality¹
 - Environmental, genetic, psychological, and behavioral causes have been described²
- According to the Center for Disease Control (CDC), approximately 41.9% of adult Americans are obese, ranking it as the second leading cause of preventable death in the United States^{3,4}
- It is estimated that 21% of US Healthcare expenditures are on obesity and obesity related conditions, which is approximately \$190 billion a year.⁵

References

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Methods

A thorough chart review performed at the James A. Haley VA Hospital using the CPRS database yielded a sample of 200 patients split into two groups of 100, one representing a cohort for acute weight gain and one control group.

The inclusion criteria for the weight gain group included gaining at least 5 BMIs over the course of one year with an initial BMI of at least 30. The control group inclusion criteria included maintaining a normal (18.5-24) BMI for at least one year. The patient's notes and labs from the respective timeframes were examined for the 38 variables studied.

The primary objective of this study is to evaluate the impact of acute stressors on weight gain. The stressors were categorized into major or minor by team physicians. Univariate analysis, multivariate analysis, and chi-squared tests were used to evaluate the data.

Table 1. Descriptive Statistics of the Weight Gain and Control Cohorts

	Weight Gain (N=100)	Control (N=100)
Mean age	57	61
M:F	85:15	80:20
Ethnicity		
White	72	71
Black	23	16
Hispanic	3	9
Other	2	4
Combat	13	13
Homeless	4	2

Results

Chart 1. Lab findings in a weight gain cohort compared to a control group

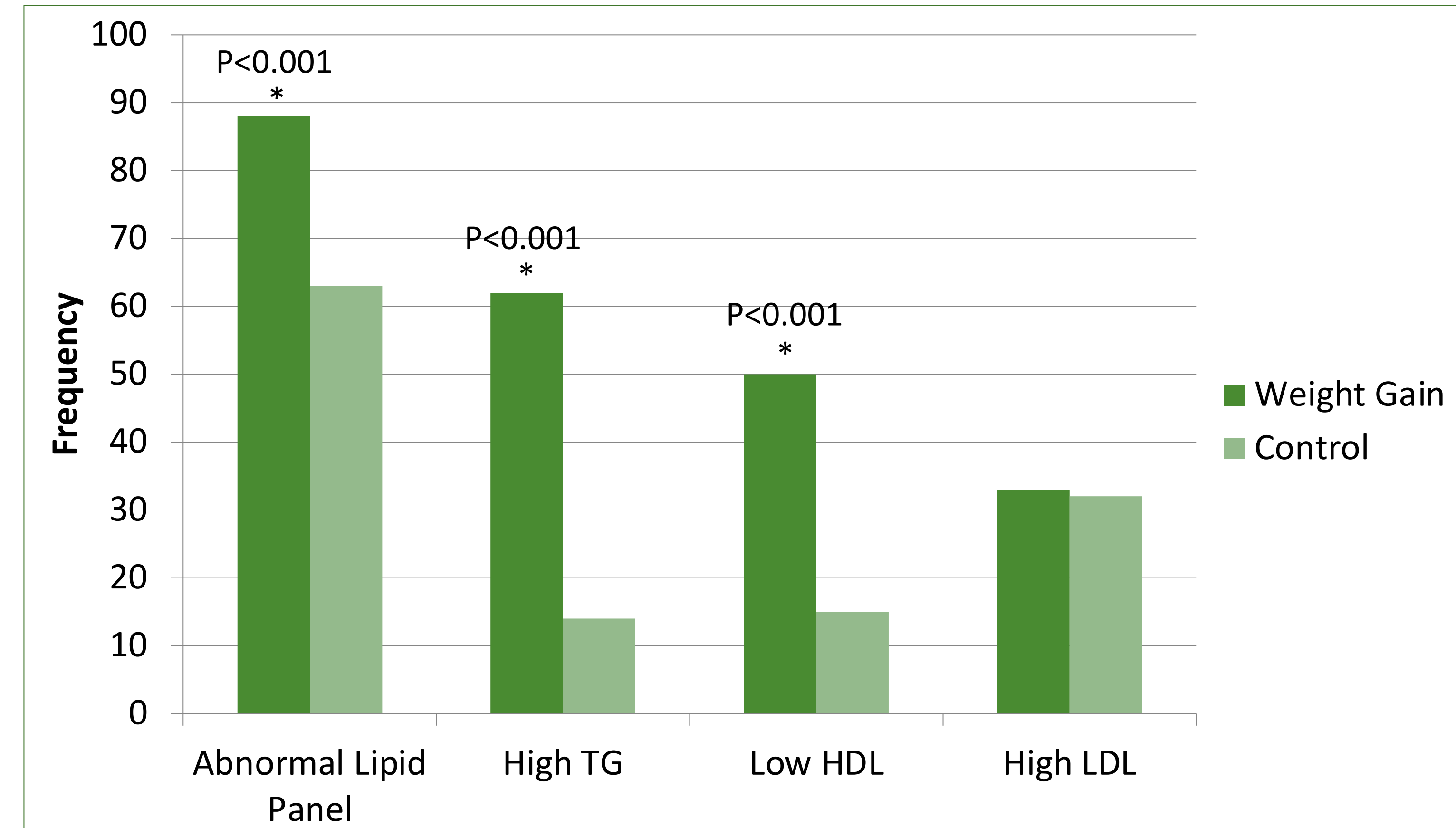
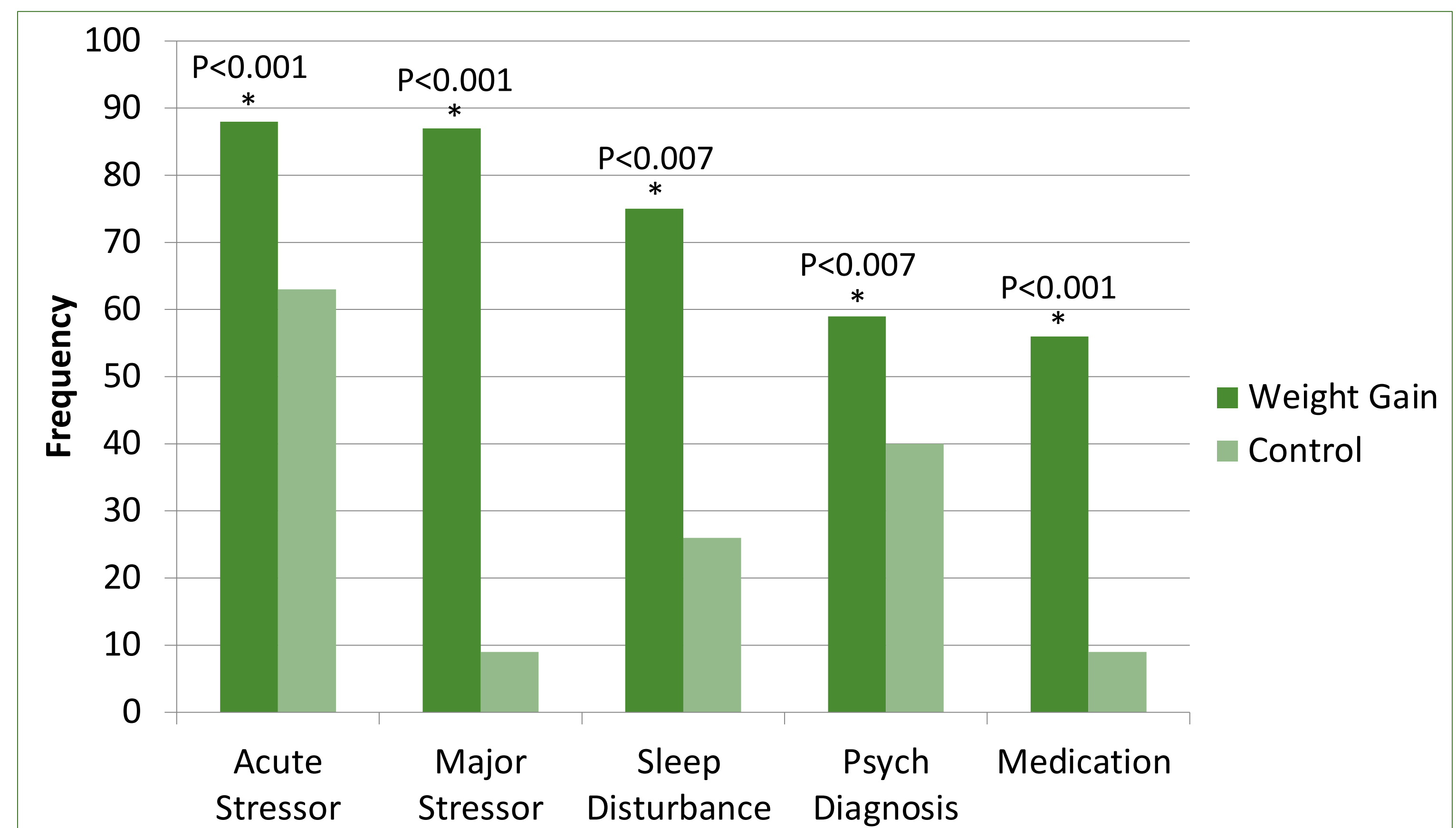


Chart 2. Frequency of risk factors for weight gain compared to a control group



Discussion

The identification of an acute stressor by comprehensive chart review while being retrospective, may be limiting.

A univariate analysis comparing a weight gain cohort with a control group found a significant difference in the presence of an acute stressor (OR 0.02 CI 95% 0.003-0.146, p<0.0001). Multivariate analysis showed that the control group had significantly less major stressors (OR 88.411 CI 95% 15.145-516.114, p<0.0001).

The numerous other risk factors found to be associated with the weight gain cohort highlights the multifactorial quality of obesity and weight gain. The most common medications associated with weight gain were gabapentin and pregabalin as well as insulin. Sleep disturbances, psychiatric diagnoses, high triglycerides, and low HDL were also associated with weight gain.

Conclusions

The strongest association with weight gain is an acute, major stressor such as a socioeconomic event, new diagnosis, or severe health exacerbation.

A multifactorial approach should be considered when thinking of the risk factors for obesity and weight gain as numerous strong associations were also found.

Future direction for this research include incorporating artificial intelligence systems to create an application or portal to help predict and prevent weight gain in at risk populations.

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