

## Psychosocial Risk Assessment and Its Association with Weight Loss and The Edmonton Obesity Staging Scale

Juan Victor Gonzalez\*

Department of Medicine, Chiclayo Lambayeque, Senior de Sipan University, Peru

### \*Corresponding author:

Juan Victor Gonzalez,  
Department of Medicine, Chiclayo Lambayeque,  
Senior de Sipan University, Peru

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## 1. Abstract

### 1.1. Introduction

Obesity is associated with multiple comorbidities and it is well known that weight loss  $\geq 5\%$  is associated with metabolic, mental and functional improvement. It is currently unknown which of the instruments that assess psychosocial health are best associated with medical, mental and functional functioning assessed with the Edmonton Obesity Staging Scale.

### 2. Hypothesis

Psychosocial risk assessment is associated with weight loss and improvement in medical, mental, and functional health at 6 months of follow-up of a multidisciplinary program.

### 3. Aim

- To determine whether the psychosocial assessment instruments used in the Obesity Clinic of the National Institute of Medical Sciences and Nutrition Salvador Zubirán are

associated with weight loss and improvement in the Edmonton Obesity Staging Scale, at 6 months of follow-up of the Obesity Patient Care Program.

- To determine whether baseline psychosocial risk assessment scales are associated with the baseline psychiatric interview

### 4. Methods

Retrospective study, including men and women who completed the program, age  $\geq 20$  years, body mass index  $\geq 30$  kg/m<sup>2</sup>. Psychosocial risk was determined with the 3-factor eating inventory, anxiety and depression scale, Edinburgh Bulimia Test and Quality of Life questionnaire. Variables at the beginning and end of the program were compared with paired T or McNemar. The association of the questionnaires with medical, mental and functional outcomes and weight loss success was analyzed with X<sup>2</sup> or Fisher and Spearman correlations, according to the nature of the variables.

**Table 1:** Correlation between the results of the anxiety and depression questionnaire, Edinburgh Bulimia Test, 18-item 3-factor eating inventory and quality of life with improvement in the Edmonton Obesity Staging Scale and success in weight loss.

		Edmonton Staging Scale		
	Doctor	Functional	Mental	Weight loss success (≥5%)
	<i>p- value</i>	<i>p- value</i>	<i>p- value</i>	<i>p- value</i>
HAD Depression (*)	0.661	0.099	<b>0.033</b>	0.138
HAD Anxiety (*)	0.42	0.707	<b>&lt;0.0001</b>	0.28
BITE- Suspected BN or binge (*)	0.914	0.359	0.77	0.385
BITE- High degree of gravity (*)	0.308	0.155	<b>0.034</b>	0.812
I3FA Inhibitory control	0.954	0.606	0.352	0.525
I3FA Cognitive restriction	0.818	0.903	0.904	0.429
I3FA Emotional eating	0.887	0.781	<b>0.007</b>	0.649
Quality of life Health	0.072	<b>&lt;0.0001</b>	<b>&lt;0.0001</b>	0.149
Quality of life Food	0.06	0.865	0.8	0.246
Social quality of life	0.911	0.086	<b>&lt;0.0001</b>	0.076
Sexual quality of life	0.608	<b>0.01</b>	<b>&lt;0.0001</b>	0.29
Quality of life Self-esteem	0.073	0.186	<b>&lt;0.0001</b>	0.105
Personal quality of life	0.53	0.1	<b>&lt;0.0001</b>	0.337
Quality of working life	0.847	<b>0.002</b>	<b>&lt;0.0001</b>	<b>0.003</b>
Quality of life Physical Activity	0.282	<b>&lt;0.0001</b>	<b>&lt;0.0001</b>	0.368

**Abbreviation** HAD: Anxiety and Depression Inventory, BITE: Edinburgh Bulimia Test, I3FA: 3-Factor Eating Inventory. BN: Bulimia Nervosa. Statistical tests: Chi-square (\*) and rest of variables: Spearman.

**Table 2:** Correlation between the results of the anxiety and depression questionnaire, Edinburgh Bulimia Test, 18-item 3-factor eating inventory and quality of life with the baseline psychiatric interview.

	Psychiatric Interview	P value
HAD Depression	T. Depressive	0.012
	T. Anxiety	0.009
	T. Binge	0.584
	Emotional eating	0.045
	Eating at night	0.141
HAD Anxiety	T. Depressive	0.375
	T. Anxiety	<b>&lt;0.0001</b>
	T. Binge	0.050
	Emotional eating	<b>&lt;0.0001</b>
	Eating at night	<b>&lt;0.0001</b>
	T. Depressive	<b>&lt;0.0001</b>
BITE total symptoms	T. Depressive	0.778
	T. Anxiety	0.258
	T. Binge	0.034
	Emotional eating	0.050
	Eating at night	0.142
BITE gravity	T. Depressive	0.534
	T. Anxiety	0.309
	T. Binge	0.591
	Emotional eating	0.042
	Eating at night	0.636

**Abbreviations:** HAD: Anxiety and Depression Assessment, BITE: Edinburgh Bulimia Test.

## 5. Results

Of a total of 113 participants, age 47.8 years, 75.2% women, body mass index 41.7 kg/m<sup>2</sup>. The baseline psychosocial assessment instruments were not associated with weight loss success, with the exception of the work quality of life questionnaire (p=0.003); but there was an association with functional health and the health quality of life questionnaire (p<0.0001), sexual (p=0.001), occupational (p=0.002) physical activity (p<0.0001); and mental health with the depression questionnaire (p=0.033), anxiety (p<0.0001), Bulimia test (p=0.034), Emotional Eating (p=0.007), health quality of life, social, sexual, self-esteem, personal, occupational and physical activity (p<0.0001). No association was found between psychosocial risk factors and medical health. Finally, an association was found between the psychiatric interview with the anxiety and depression questionnaire and the Bulimia test (p < 0.05).

## 6. Conclusions

Questionnaires assessing psychosocial factors were associated with improved functional and mental health, but not with improved medical health or weight loss success, except for work-related issues. The anxiety and depression questionnaire and the Edinburgh Bulimia Test were also found to correlate with the psychiatric interview. With these results we could recommend the use of these questionnaires in care programs for patients with obesity.

Limitations:

- There was no control group.
- Only two measurements were performed: baseline and at 6 months, not including follow-up measures to evaluate these results in the longer term.

Psychosocial risk questionnaires are adjuvant instruments in obesity programs, which are very useful as screening tools; however, they are not intended to replace the psychiatric interview.