Pre-surgical Weight is Associated with Pain, Functional Impairment, and Anxiety among Gastric-Bypass Surgery Patients

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Background

• Chronic pain and obesity are both significant public health concerns
• Obesity is a known risk factor for pain
• Pain and obesity are multidimensional with behavioral, cognitive, and emotional factors
• Depression and anxiety are common in both conditions
Objectives

1) Investigate relationships between weight, pain, functional impairment, depression, and anxiety in patients undergoing consideration for bariatric surgery.

2) Characterize the psychosocial impact of pain on weight loss surgery candidates.
Methods

Participants
• 115 patients scheduled to undergo weight loss surgery
• Primarily adult (M=46.6; SD=12.7)
• Female (80%)
• Caucasian (63%)
• Average pre-surgical BMI=50.7 (SD=11.6)
Methods

Research Design
• Prospective

Measures
• Brief Pain Inventory (BPI)
• Beck Anxiety Inventory (BAI)
• Center for Epidemiologic Studies 10-item Depression Scale (CESD-10)
Methods

Procedure
• Completed measures as part of routine clinical care during pre-surgical evaluation process
• Simultaneous multiple regression analyses were used to examine the relationship between mental health variables, weight, and pain
• Baron and Kenny’s four step approach tested anxiety as a mediator of the relation between weight and pain
Results

- Pre-surgical weight was associated with a variety of pain and psychosocial variables.

<table>
<thead>
<tr>
<th></th>
<th>Pre-Surgical Weight</th>
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<tbody>
<tr>
<td>Pain on average</td>
<td>.23*</td>
</tr>
<tr>
<td>Functional Impairment</td>
<td>.19*</td>
</tr>
<tr>
<td>Mood</td>
<td>.19*</td>
</tr>
<tr>
<td>Walking Ability</td>
<td>.26**</td>
</tr>
<tr>
<td>Relationship Impairment</td>
<td>.23*</td>
</tr>
<tr>
<td>Enjoyment of life</td>
<td>.29**</td>
</tr>
<tr>
<td>Anxiety</td>
<td>.22*</td>
</tr>
<tr>
<td>Depression</td>
<td>-.09ns</td>
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</tbody>
</table>

- Increased weight was related to higher levels of pain ($R^2=.12$, $\beta=.33$, $p=.002$).

- Increased levels of depression and weight were related to increased pain ($R^2=.25$, $\beta=.41$, $p=.000$).

*p < .05; **p < .01
Results

- Anxiety significantly predicted pain and served as a full mediator of the relation between weight and pain.

\[ \beta = .22^* \]

\[ \beta = .33^{**} \]

\[ \beta = .19 \ (ns) \]

\[ *p < .05, **p < .01 \]
Discussion

• Consistent with the literature higher pre-surgical weight was associated with increased pain and functional limitations.
• Anxiety appears to play a unique role in the lives of an obese population and significantly impacts the experience of pain

Limitations
• Etiology of pain was unknown
• Post-surgical data has not been explored to evaluate the impact of weight loss on pain and functioning

Future Directions
• Improve understanding of the nature of anxiety in an obese population
• Role of anxiety on functioning in bariatric patients
• Changes in anxiety and functioning with weight loss
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