Short communication

Defense mechanisms in a sample of non-psychiatric obese subjects

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Abstract

The aim was to assess the prevalent defense mechanisms in a sample of obese subjects; since specific defensive styles may interfere with the management of stressors and emotions, they may also influence the onset, the severity, and the maintenance of obesity. 70 obese subjects and 70 healthy normal-weight volunteers were assessed using the Defense Mechanisms Inventory — DMI. Significant differences between groups have emerged at Turning Against Object (t = −5.30; p < 0.0001), Projection (t = −5.55; p < 0.0001), Turning Against Self (t = −4.87; p < 0.0001) and Reversal (t = −3.61; p < 0.0001) variables. Within the obese group, significant differences have been found at Turning Against Object (U = 264; p = .001) and Projection (U = 359; p = .042) scales, both higher in males. No significant differences on DMI scores in relation to the severity of obesity have been observed. An inadequate defensive structure might represent a vulnerability to emotional states and stressful life events. The assessment of defense mechanisms may provide a valid tool for long-term treatments of obesity.

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1. Introduction

Obesity is actually conceptualized as a complex, multifactorial disorder in which genetic, psychological, physiological, environmental and socio-economic factors play a major role (Devlin, Yanowski, & Wilson, 2000). In the context of the research investigating the psychological components of obesity, personality (Golay et al., 1997; Fassino et al., 2002) and emotional factors (Bruch, 1973; Canetti, Bachar, & Berry, 2002; Geliebter & Aversa, 2003) have been widely studied; conversely, only few studies have focused on defense mechanisms of obese subjects (Albonetti & Clerici, 1996; Castelnuovo-Tedesco & Whisman Reiser, 1988). Defense mechanisms are “automatic psychological processes that protect the individual against anxiety and from the awareness of internal or external dangers or stressors” (American Psychiatric Association, 1994). Ego defense mechanisms are different from coping skills on the basis of

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specific characteristics; coping skills require the awareness and decision to manage and resolve a conflict, whereas ego
defense mechanisms act without conscious awareness and can only interfere with the inner psychological state,
producing a distortion of reality (Cramer, 1998). A study conducted on a sample of 106 obese subjects by Albonetti and
Clerici (1996) found that primitive defense mechanisms such as denial, projection, regression and removal were
prevalent in their clinical sample. This result was coherent with the findings from a previous study which highlighted
that defense mechanisms associated with the eating disorders were archaic (splitting, projection, displacement, and
denial) (Castelnuovo-Tedesco & Whisnant Reiser, 1988). Thus, obese subjects tended to use this group of defenses to
protect themselves from depressive affects and from the awareness of aggressive drives which they tended to inhibit,
project and turn against an external object, and to replace with overeating (Bruch, 1973). The aim of the present study
was to assess the prevalent defense mechanisms in a sample of obese subjects; we started from the hypothesis that since
defensive styles may influence the management of stressors and emotions, they may also reveal specific features in
obesity.

2. Methods

2.1. Subjects

The study sample consisted of 70 obese outpatients (21 males and 49 females) aged between 18 and 66, Body Mass
Index (BMI — body weight in kg/[height in m]²) value >30, consecutively selected in an eight month period from
obese patients at the Clinic for the Obesity of the University Hospital, Messina. The control sample consisted of 70
healthy normal-weight volunteers (BMI= 18.5–24.9) matched for age, sex, level of education and marital state,
recruited among general population. All subjects, after a clinical evaluation including body weight (kilograms) and
height (meters) assessments, were screened for mental disorders by an expert psychiatrist using a non-structured
psychiatric interview. Patients with any major psychiatric disorder, included eating and binge disorders, significant
concurrent medical illnesses, organic brain disorder, history of substance and alcohol abuse, mental retardation were
excluded. Both clinical and control subjects provided written informed consent after a full explanation of the study
design which had been approved by the local ethic committee.

2.2. Instruments

All the subjects were assessed using the full version of the Defense Mechanisms Inventory DMI (Ihilevich & Gleser,
1994) which measures the frequency of usage of five major groups of defense mechanisms: Turning Against Object
(TAO, including displacement), Projection (PRO), Principalization (PRN including intellectualization, rationalization,
and isolation), Turning Against Self (TAS), Reversal (REV, including denial, repression, and reaction formation).

<table>
<thead>
<tr>
<th></th>
<th>Obese</th>
<th>Normal-weight</th>
<th>Student t test</th>
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<tbody>
<tr>
<td></td>
<td>M (S.D.)</td>
<td>M (S.D.)</td>
<td>t</td>
</tr>
<tr>
<td>Sex (M/F)</td>
<td>21/49</td>
<td>21/49</td>
<td>–</td>
</tr>
<tr>
<td>Age (years)</td>
<td>39.46 (14.29)</td>
<td>39.11 (9.23)</td>
<td>.169</td>
</tr>
<tr>
<td>Weight (Kg)</td>
<td>89.65 (12.19)</td>
<td>62 (10.69)</td>
<td>9.491</td>
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<tr>
<td>BMI</td>
<td>34.71 (3.41)</td>
<td>21.11 (1.42)</td>
<td>30.719</td>
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<tr>
<td>Level of education (years)</td>
<td>12.82 (3.38)</td>
<td>13.31 (3.15)</td>
<td>-.873</td>
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<td>Please tag this as a one-row table</td>
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</tr>
</tbody>
</table>

Marital status (%)
- Single: 26.9, 25
- Married: 40.4, 41
- Divorced: 32.7, 34
- Widower: 0, 0

Chi-square
\( \chi^2 \) | p
---|---
.070 | .966
2.3. Statistical analysis

Continuous data were expressed as mean and SD and the difference between the two groups was evaluated by the Student’s *t* test for independent sample; non-continuous data were expressed as a percentage and the groups compared by using the chi-square test. Relating to obese group, gender and obesity grade differences were assessed using the Mann–Whitney *U*-test for independent sample. The significance level was *p* < .05.

3. Results

Clinical and socio-demographic features of both groups are shown in Table 1; the group of obese patients are matched for age (mean ± S.D.: 39.46 years ±14.29 vs. 39.11 years ±9.23), level of education (mean ± S.D.: 12.82 years ± 3.38 vs. 13.31 years ±3.15) with the control group. No significant differences between obese and control groups were found except for weight and BMI, as expected. Significant differences between groups have emerged at TAO, PRO, TAS, and REV variables whose correspondent scores resulted globally lower in obese patients than in controls (Table 2). Within the obese group, significant differences have been found at TAO and PRO scores, both higher in males (Table 3). No significant differences on DMI scores in relation to the severity of obesity have been observed (Table 4).

4. Discussion

Our results have shown that obese patients, when compared with normal-weight subjects, expressed a defensive profile characterized by statistically significant low scores at all DMI defensive scales; as evidenced in the Results section, no differences in the defensive profile have been found in relation to the severity of obesity. It could be hypothesized that this lessening of the defense mechanisms in the face of stressful events and negative emotions, which characterizes the examined sample of obese patients, might reduce their ability to effectively manage emotional states and affects. In this framework, overeating may hold the role of a homeostatic mechanism (substituting defense mechanisms) used to regulate mood, to avoid negative affect or to cope with adverse life events. It cannot be excluded, however, that obese subjects may have a bias toward denying or minimizing pathological traits. The results obtained have evidenced that TAO and PRO scores were higher in males than in females; these gender differences within the clinical sample are not specific of obese people; the tendency to use mainly externalizing defenses, such as turning

| Table 2 | Comparisons between mean scores at DMI in obese and normal-weight subjects |
|---------|-----------------|-----------------|-----------------|-----------------|-----------------|
|         | Obese           | Normal-weight   | Student *t* test |                 |                 |
|         | Mean ± S.D.     | Mean ± S.D.     | *t*              | *p*              |                 |
| TAO     | 38.03 ± 12.75   | 48.96 ± 11.63   | −5.30            | <.0001           |                 |
| PRO     | 43.26 ± 8.52    | 51.04 ± 8.07    | −5.55            | <.0001           |                 |
| PRN     | 47.91 ± 9.29    | 49.59 ± 8.72    | −1.10            | .274             |                 |
| TAS     | 38.07 ± 10.13   | 46.80 ± 11.07   | −4.87            | <.0001           |                 |
| REV     | 45.77 ± 11.81   | 52.87 ± 11.48   | −3.61            | <.0001           |                 |

Scores have been compared by Student’s *t* test for two independent samples.

| Table 3 | Comparisons between mean scores at DMI in obese males and females |
|---------|-----------------|-----------------|-----------------|-----------------|
|         | Obese males     | Obese females   | Mann–Whitney *U*-test |
|         | Mean ± S.D.     | Mean ± S.D.     | *U*              | *p*              |
| TAO     | 45.86 ± 12.563 | 34.67 ± 11.379 | 264              | .001             |
| PRO     | 46.14 ± 8.380  | 42.02 ± 8.365  | 359              | .046             |
| PRN     | 46.05 ± 9.255  | 48.71 ± 9.287  | 435.5            | .311             |
| TAS     | 36.38 ± 9.025  | 38.80 ± 10.567 | 470              | .568             |
| REV     | 44.05 ± 9.780  | 46.51 ± 12.603 | 496              | .812             |

Scores have been compared by Mann–Whitney *U*-test for two independent samples.
against the object, acting-out and projection, is more diffused in males rather than females in general population (Cramer, 2002). Among psychological and emotional factors that are believed to contribute to the etiology and maintenance of obesity (Byrne, 2002), an inadequate defensive structure might represent a vulnerability factor to emotional states and stressful life events. The assessment of defense mechanisms may provide further clinical indicators to consider in the context of the multidisciplinary treatment of obesity, involving educational and psychotherapeutic programmes. Our results show a number of limitations: the small sample makes difficult to extend our findings to the entire obese population; the same variables should be investigated in obese with a comorbid psychiatric disorder, such as binge eating disorder. Despite the limited nature of the study, it seems of interest to note that the assessment of defense mechanisms may provide a suitable strategy for integrating long-term treatments of obesity with the aim of remodelling unsuccessful defensive profiles in the context of psychodynamic-oriented trainings.

References


Table 4
Comparisons between mean scores at DMI in obese subjects divided in two subgroups according to BMI (n=42 with BMI=30-34.9; n=28 with BMI>35)

<table>
<thead>
<tr>
<th></th>
<th>BMI=30–34.9 (n=42)</th>
<th></th>
<th>BMI&gt;35(n=28)</th>
<th></th>
<th>Mann–Whitney U-test</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
<td>S.D.</td>
<td>U</td>
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<tr>
<td>TAO</td>
<td>38.14</td>
<td>12.28</td>
<td>37.86</td>
<td>13.64</td>
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<tr>
<td>PRO</td>
<td>42.29</td>
<td>8.13</td>
<td>44.71</td>
<td>9.04</td>
<td>511.000</td>
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<tr>
<td>PRN</td>
<td>48.76</td>
<td>8.96</td>
<td>46.64</td>
<td>9.78</td>
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<tr>
<td>TAS</td>
<td>37.38</td>
<td>10.60</td>
<td>39.11</td>
<td>9.46</td>
<td>522.000</td>
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<tr>
<td>REV</td>
<td>44.33</td>
<td>9.82</td>
<td>47.93</td>
<td>14.21</td>
<td>519.500</td>
</tr>
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DMI scores have been compared by Mann–Whitney U-test for two independent samples.