# Psychopathology and body dissatisfaction in prospective plastic surgery patients: the SMILE experience

## *Psicopatologia e insoddisfazione per il proprio corpo in pazienti candidati a interventi di chirurgia plastica: l'esperienza del servizio SMILE*

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## Summary

### Objectives

*According to the Diagnostic and Statistical Manual of Mental Disorder IV (DSM-IV), Body Dysmorphic Disorder (BDD) is defined as an excessive concern with an imagined or slight defect in physical appearance. Body dysmorphic disorder (BDD) is estimated to affect 1-2% of the general population. Almost 6-15% of subjects suffering from body dissatisfaction (BD) undergo plastic surgery (PS) without any psychological benefits. Castle and Morkell have shown that approximately 6%-15% BDD patients require plastic surgery (PS) operations. This treatment, however, frequently results in no change or worsening of body dissatisfaction symptoms. The aim of the present study was to investigate the presence of BD and psychiatric symptoms in a sample of prospective PS patients.*

### Methods

*Between November 2009 and April 2010, 56 patients (M = 12; F = 44) referred to the Plastic Surgery Unit of L'Aquila were enrolled. All patients were asked to complete a self-administered anonymous questionnaire for socio-demographic data collection, the Symptom Check List 90 (SCL-90) for psychopathological evaluation and the Body Uneasiness Test (BUT) to evaluate body dissatisfaction.*

### Results

*33.92% of the study participants showed positive BUT results. Individuals with a body dissatisfaction (GSI ≥ 1.2) had significantly higher scores on all SCL-90 subscales. SCL-90 scores showed the prevalence of the following subscales: "depression" (mean = 9.70, ds ± 10.1), "somatisation" (mean = 9.41, ds ± 8.1), "obsessiveness-compulsiveness" (mean = 8.25, ds ± 7.4), and "anxiety" (mean = 8.02, ds ± 7.5). Next, the total sample (N = 56) was divided into two groups according to type of surgical intervention: reconstructive surgery (N = 24; 42.6%) and aesthetic surgery (N = 32; 57.4%) and also further divided in a BD group (GSI ≥ 1.2) and no BD group (GSI < 1.2) to analyze psychopathological differences.*

### Conclusions

*Our results, in agreement with international literature, seem to confirm the presence of considerable body dissatisfaction among patients requesting PS interventions, as well as their comorbidity with other psychiatric symptoms. In most North American countries, prospective PS patients receive preoperative psychiatric assessment. This procedure is not common in Europe. The present study seems to confirm the importance of a psychiatric screening of this patient group in order to identify early a body dissatisfaction and a diagnosis of BDD to assess suitability for surgery. In conclusion, our findings show the importance of active collaboration between Psychiatry and Plastic Surgery to avoid global health impairment and thus improve patient quality of life.*

### Key words

*Plastic Surgery • Body dissatisfaction • Body Dysmorphic Disorder • Psychopathology*

## Introduction

According to the Diagnostic and Statistical Manual of Mental Disorder IV (DSM-IV), body dysmorphic disorder (BDD) is defined as an excessive concern with an imagined or slight defect in physical appearance [1]. BDD shows high rates of comorbidity with other psychiatric disorders, including major depression, social phobia, obsessive compulsive disorder (OCD) and substance use disorders [2].

In the general population, the prevalence of BDD is approximately 1-2% [1]. In a study of 566 college students, a prevalence of 2% was reported [3], but later reports using less strict diagnostic criteria have reported a prevalence ranging between 13% and 28% [4-6].

Unfortunately, BDD is often unrecognized and undi-

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agnosed [7]. This may be ascribed to the lack of medical screening, which may lead to frequent erroneous diagnoses of comorbidity disorders [8].
Diagnostic evaluation of disorders of body image is not simple due to the uncertainties in the definition of these concepts and because attitudes toward body image is a multidimensional concept that includes elements of cognitive-evaluative, emotional and behavioural [9].
Castle and Morkell have shown that approximately 6%-15% BDD patients require plastic surgery (PS) operations [10]. This treatment, however, frequently results in no change or worsening of BDD symptoms. A 1700% increase in the demand of PS or other aesthetical treatments was reported in 2004 compared with the previous decade [11].
Sarwer et al. underlined that, especially in BDD subjects, body dissatisfaction (BD) plays a crucial role in motivating patients to seek PS [12]. It has been thus suggested that BD should be assessed in individuals undergoing cosmetic surgery using a multidimensional model considering cognitive, affective and behavioural dimensions [12-14]. In this regard, PS has been defined as "*scalpel psychotherapy*" [15-18].
A discussion of the popularity of cosmetic surgery must consider a number of contemporary theoretical explanations. These include the large body of social psychological research on the role of physical appearance in daily life as well as the growing literature on body image and, specifically, its contribution to the pursuit of appearance modifying behaviours [7].
Psychological assessment of subjects requesting PS is still limited. In most studies, patient satisfaction level after cosmetic surgery was the only outcome measure. Patients often reported high satisfaction levels immediately after PS, but this outcome was not reassessed after long-term follow-up [19]. To assess the possibility to consider PS as a therapeutic strategy for BDD or people with body dissatisfaction, long-term studies are needed [7 20]. In this investigation, we sought to evaluate the presence of considerable body dissatisfaction and psychiatric symptoms in a sample of prospective patients undergoing either reconstructive or aesthetical surgery.

## Methods

Between November 2009 and April 2010, 54 consecutive patients referring to the Plastic Surgery Unit of L'Aquila University were enrolled.
All patients were asked to complete a self-administered anonymous questionnaire for socio-demographic data collection, the *Symptom Check List 90 (SCL-90)* [19] and the *Body Uneasiness Test (BUT)* [20].
The *Symptom Check List 90 (SCL-90)* is a self-report symptom inventory designed for psychopathological evaluation [19]. It consists of 90 items investigating psychological symptoms with a time reference of "the past 7 days including today". All items are scored on a five-point Likert scale, ranging from 0 (symptom absent) to 4 (symptom very often present) and are divided into 10 subscales: 1) somatisation; 2) obsessiveness/compulsivity; 3) interpersonal sensitivity; 4) depression; 5) anxiety; 6) anger/hostility; 7) phobia; 8) psychosis; 9) paranoia; 10) sleep disturbances. Scores ≥ 1 are considered as pathological.
The *Body Uneasiness Test (BUT)* is a 71-item self-report scale used to evaluate body image and relevant pathologies [20] divided into two parts:

- *BUT a*, consisting of 34 clinical items;
- *BUT b*, which consists of 37 items regarding body parts and functions.

Items are scored on a 6-point scale, ranging from 0 (never) to 5 (always); higher values indicate more severe conditions. In addition to the *overall rating*, other indexes could be obtained from BUT such as the *Global Severity Index (GSI)* – which is calculated dividing *BUT a* scores by *BUT a* item number (n=34). The amount of all the items with non-zero responses represents the *Positive Symptom index (PST)*. The *Positive Symptom Distress Index (PSDI)* is the sum of the values of the items receiving non-zero responses divided by the PST.
BUT is divided into five subscales: *Weight Phobia* (*WP*), *Body Image Concerns* (*BIC*), *Avoidance* (*A*), *Compulsive Self-Monitoring* (*CSM*), *Depersonalization* (*D*). Subscale scores may be useful to identify specific problematic areas, evaluate prognosis and programme therapy.
In our study, a GSI score ≥ 1.2 was considered as positive for BD. GSI scores < 1.2 indicated the absence of clinically significant body dissatisfaction.
The total sample was divided according to the type of requested surgery (reconstructive or strictly aesthetical).
According to BUT positiveness (GSI score ≥ 1.2), the sample was further divided into a BUT positive group composed of subjects showing body dissatisfaction and a BUT negative group. These groups were investigated to detect differences in psychopathological characteristics by means of SCL-90.
Statistical analysis was performed using SPSS (version 17.0). For all analyses, a P value less than 0.05 (2-tailed) considered statistically significant. Descriptive statistics described demographic and clinical characteristics of the study sample. Group comparisons were performed using *independent t tests* for continuous variables and *chi-square tests* for categorical variables.

## Results

Socio-demographical and clinical characteristics of the sample are shown in Table I.
A GSI ≥ 1.2 (average rating = 2.1, ds ± 0.7) was observed in 37.7% of the total sample, while the 62.3% did not

**TABLE I.**
Clinical and socio-demographic characteristics of the sample. *Caratteristiche socio-demografiche e cliniche del campione.*

| | Mean ± Standard Deviation |
|---|---|
| Age | 37,4 ± 13,4 |
| Educational level (years) | 12,9 ± 3,2 |
| Number of procedures previously effected | 1,69 ± 3,9 |
| M/F | 12/42 |

show any significant body dissatisfaction (average rating = 0.4; ds ± 0.3).
The mean scores on SCL-90 and its subscales are shown in Figure 1.
In the overall sample, SCL-90 scores showed the prevalence of the following symptomatology: "depression" (mean = 9.70, ds ± 10.1), "somatization" (mean = 9.41, ds ± 8.1), "obsessiveness-compulsiveness" (mean = 8.25, ds ± 7.4) and "anxiety" (mean = 8.02, ds ± 7.5).
The total sample (N = 56) was divided into two groups according to surgery type: reconstructive surgery (N = 24; 42.6%) and aesthetic surgery (N = 32; 57.4%). Baseline characteristics of the two groups are presented in Table II.
No statistically significant differences with regard to socio-demographic and clinical characteristics were found between these patient groups.
The mean scores on the SCL-90 and its subscales for the two groups are shown in Figure 2. Statistically significant differences ($p < 0.05$) between two groups were observed in the "somatization" and the "obsessiveness-compulsiveness" SCL-90 subscale. Specifically, prospective aesthetical surgery patients had higher scores than reconstructive surgery patients.

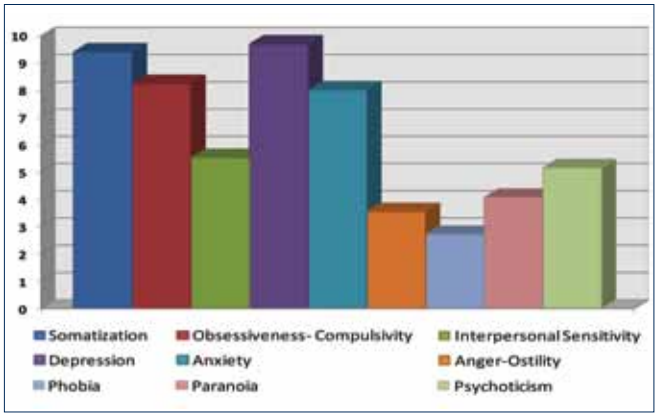


**FIGURE 1.**
SCL-90 subscales score for the total sample. *Punteggi delle sottodimensioni dell'SCL-90 del campione totale.*

**TABLE II.**
Clinical and socio-demographic features of the reconstructive and the aesthetic surgery groups (mean ± SD). *Caratteristiche cliniche e socio-demografiche dei gruppi sottoposti a chirurgia estetica e ricostruttiva.*

| | Reconstructive Surgery (N=24) | Aesthetic Surgery (N=32) |
|---|---|---|
| Number of procedures effected | 1 ± 0 | 2,2 ± 5,2 |
| Age | 36,1 ± 14,9 | 38,4 ± 12,3 |
| Educational level (year) | 12,5 ± 2,9 | 13,2 ± 3,4 |
| M/F | 6/18 | 7/25 |

The total sample was also divided into a BD Group (GSI ≥ 1.2) and no BD Group (GSI < 1.2). Twenty-two subjects (33.92%) were BUT positive (GSI > 1.2) with a mean score of 2.11 (± 0.71), while 34 subjects (66.02%) did not show significant body dissatisfaction. Baseline characteristics of the two groups are reported in Table III.
Groups did not differ significantly with regard to the surgery type; however, a higher number of no BD sub-

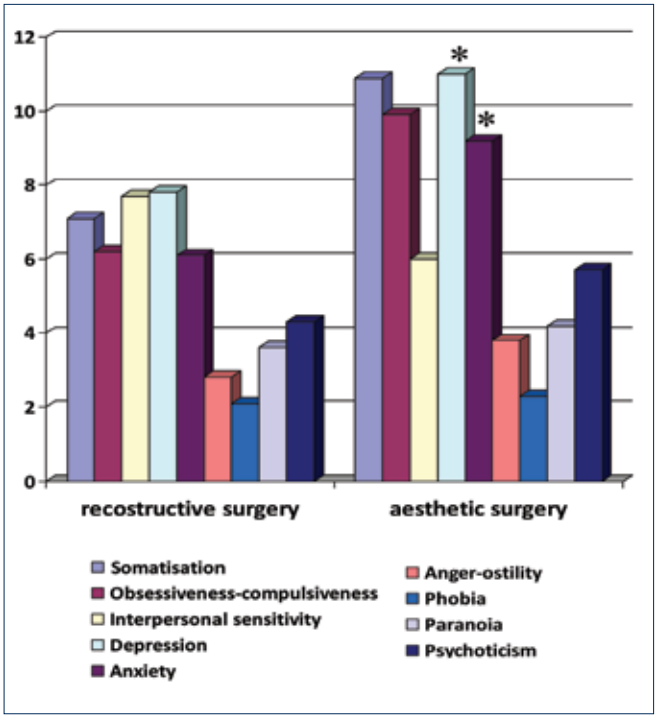


**FIGURE 2.**
Comparison of SCL-90 subscales score between the reconstructive surgery group and the aesthetic surgery group. *Confronto nelle sottodimensioni dell'SCL-90 tra il gruppo della chirurgia estetica e ricostruttiva.*

**TABLE III.**
Clinical and socio-demographic characteristics of BUT positive and BUT negative groups (mean ± SD). *Caratteristiche cliniche e socio-demografiche dei gruppi con BUT positiva e BUT negativa.*

| | But positive (N = 22) | But negative (N = 34) | t | p |
|---|---|---|---|---|
| Age | 36,8 ± 13,4 | 38,3 ± 13,4 | 0,40 | ns |
| Educational level (year) | 11,5 ± 3,9 | 13,6 ± 2,4 | 2.15 | < 0.05 |
| Number of procedures | 1.30 ± 0,9 | 1,0 ± 0,3 | -1.28 | ns |
| M/F | 3/19 | 10/24 | 3,43* | ns |

* Chi-square test

jects underwent cosmetic surgeries. Groups did not show any statistically significant differences in socio-demographic and clinical characteristics, with the exception of education (no BD subjects had higher educational levels).
Psychopathological assessment showed statistically significant differences in SCL-90 total scores and subscales scores between the two groups, with BD subjects scoring significantly higher (Fig. 3).

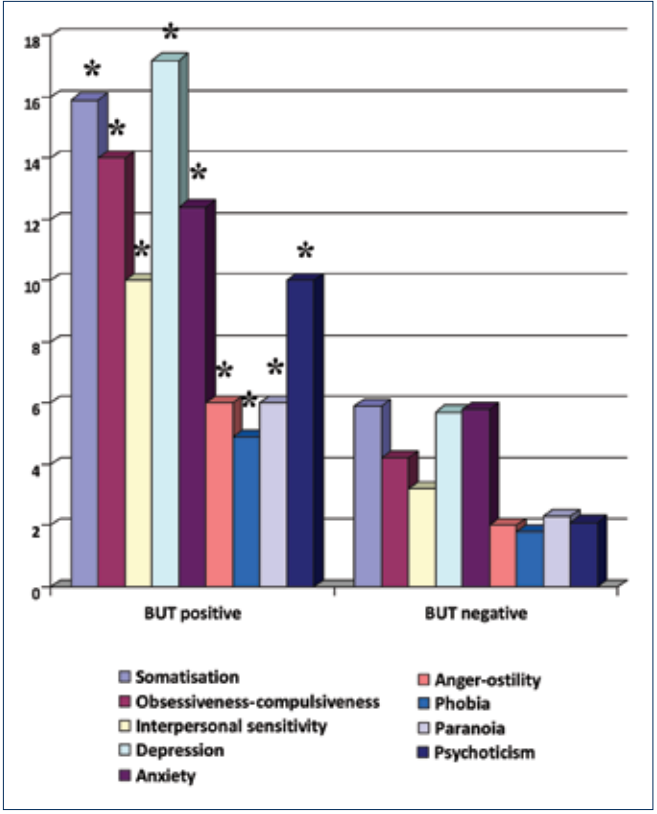


**FIGURE 3.**
Comparison of SCL-90 subscales score between BUT positive and BUT negative subjects. *Confronto nelle sottodimensioni dell'SCL-90 tra gruppi con BUT positiva e BUT negativa.*

## Discussion

In most North American countries, prospective PS patients receive preoperative psychiatric assessment. This procedure is not common in Europe. A close cooperation between psychiatrists and plastic surgeons is needed in order to early diagnose and slow progression of psychopathological disorders. This alliance is even more significant in the light of the dramatic decrease in mean age of PS prospective patients. In fact, in 2002, at least 70% of PS patients were aged between 19 and 50 years. Moreover, at least 225,000 teenagers (4%) underwent non-invasive cosmetic treatments with an increase in the number of male subjects [22]. Our results are in agreement with this trend (mean age of our sample: 37.4 ± 13.4 years).
Our results showed that 37.7% of total sample had body dissatisfaction. However, no significant differences in the presence of BD were found between aesthetic and reconstructive surgery patients, although subjects with body dissatisfaction were more frequent in the former group (43.3% versus 30.4%, respectively). Such data cannot be easily compared with those reported in the literature, as no evidence of BD in PS patients has been reported. Most studies mainly focus on BDD influence in such clinical population. Several studies have reported that an increasing number of teenagers – girls in particular – feel unsatisfied with their body and undergo non-invasive cosmetic treatments [11 22]. Moreover, a recent study investigating 500 female college students showed that at least 5% underwent PS intervention, 40% declared their intention to undergo cosmetic surgery in the future and 48% declared the intention to undergo an intervention when they reach 50 years of age.
Psychopathologic assessment of the total sample showed that people with BD showed more severe psychopathological patterns. The BD group showed significantly higher SCL-90 items scores compared with the no BD group. These results underline the importance

of psychiatric assessment in subjects showing body dissatisfaction. One of the limitations of our study was the lack of diagnostic assessment to determine the most frequent psychiatric disturbances in BDD patients undergoing PS. However, the aim of the present study was to investigate the presence of any psychopathologic symptoms. Whether our results are considered in a dimensional rather than classification-oriented diagnosis perspective, "depression", "obsessiveness-compulsiveness", and "anxiety" are the most frequent reported symptoms and can be related to depressive and anxiety disorders as well as to BDD. Previous studies have shown that subjects undergoing PS interventions had more frequently Axis I disturbances, such as depression, anxiety and BDD [23 24 1].

In this same perspective, we compared subjects undergoing esthetical (AS) or econstructive (RS) surgery with regards to psychopathological symptoms. Our data showed that AS subjects scored significantly higher in the SCL-90 "somatization" and "obsessiveness-compulsiveness" subscales compared to RS subjects. Body dissatisfaction seems to be a crucial motivation for patients seeking PS, and this could explain why AS is defined as "*scalpel psychotherapy*" [11 14].

## Conclusion

Our results appear to confirm the presence of considerable body dissatisfaction among patients requesting PS interventions, as well as their comorbidity with other psychiatric symptoms. Additionally, the prevalence of body dissatisfaction does not appear to depend on the type of requested surgery.

Despite the limitations of the study such as small sample size, lack of assessment and diagnosis by a senior psychiatrist, the present report highlights the importance of psychological assessment in PS prospective patients, considering that body image disturbances might lead to an exacerbation of severe disorders with a rate of high co-morbidity and an unfavourable prognosis, and thus be considered as an exclusion criteria for this type of surgery.

Additional studies of the outcome of appearance enhancing treatments in patients with BDD are also needed. Prospective and naturalistic studies may help clarify the role of appearance enhancing procedures in the treatment of body dissatisfaction and a psychiatric diagnosis such as BDD.

Finally, our study indicates the importance of active collaboration between Psychiatry and Plastic Surgery in order to establish an early diagnosis, avoid global health impairment and thus improve patient quality of life.

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