

RHINOLOGY

# Body dysmorphic factors and mental health problems in people seeking rhinoplastic surgery

## *Dismorfismo corporeo e disordini psichiatrici in pazienti candidati ad intervento chirurgico di rinoplastica*

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SUMMARY

There has been increasing number of requests for cosmetic rhinoplastic surgery among Iranian people in different age groups in recent years. One risk for people who undergo such plastic operations is the presence of body dysmorphic disorder (BDD), which can complicate the result and decrease the rate of satisfaction from surgery. This study aimed to investigate mental health problems in people seeking rhinoplastic surgery. In this case-control study, the scores of General Health Questionnaire (GHQ) and DCQ (Dysmorphic Concerns Questionnaire) were obtained from 50 individuals who were candidates for rhinoplasty, and the results were compared with a normal control group. The total GHQ score and scores in anxiety, depression, and social dysfunction sub-scales were higher among the study group. This was the same for the DCQ score. However, the scores of somatization sub-scale of GHQ were not significantly different between the two groups. Psychiatric evaluation of candidates for rhinoplasty seems necessary for prevention of unnecessary and repetitive surgical operations.

KEY WORDS: Rhinoplasty • Body dysmorphic disorder • Mental health problems

RIASSUNTO

*Negli ultimi anni è aumentata nella popolazione iraniana la richiesta di interventi chirurgici di rinoplastica nelle diverse fasce d'età. Tuttavia le persone che si sottopongono a questo tipo d'intervento spesso presentano un Disturbo di Dismorfismo Corporeo (BDD) che potrebbe compromettere il risultato e quindi il tasso di soddisfazione dei pazienti. Obiettivo di questo studio è stato valutare i disordini di natura psichiatrica in pazienti candidati ad intervento chirurgico di rinoplastica. In questo studio caso-controllo i punteggi del "General Health Questionnaire" (GHQ) e del "Dysmorphic Concerns Questionnaire" (DCQ) sono stati ottenuti da 50 persone candidate ad intervento chirurgico di rinoplastica e sono stati confrontati con un gruppo di controllo costituito da soggetti normali. Il Punteggio totale del GHQ e i punteggi parziali relativi ad ansia, depressione, disfunzione sociale erano più alti nel gruppo di studio. Lo stesso risultato è stato ottenuto con il DCQ. Tuttavia, le differenze fra i due gruppi riguardo i punteggi parziali di GHQ non erano statisticamente significative. In conclusione una valutazione psichiatrica dei candidati ad intervento di rinoplastica sembra essere necessaria al fine di evitare interventi chirurgici inutili.*

PAROLE CHIAVE: *Rinoplastica • Dismorfismo corporeo • Disordini psichiatrici*

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### Introduction

There has been increasing number of requests for cosmetic rhinoplastic surgery among Iranian people in different age groups in recent years. One can assume the face is the most important part of body for expression of emotions, and that the nose is the most prominent part of the face. One risk for people who undergo such operations is the occurrence of body dysmorphic disorder, which can complicate the results and decrease the rate of satisfaction from surgery. Honigman et al. reported that body dysmorphic disorder increases the rate of dissatisfaction among people who undergo both plastic surgery and screening for this disorder among those seeking plastic surgery<sup>1</sup>.

In a similar study, Kisely found body dysmorphic disorder and other psychiatric disorders to be more common among individuals who desired rhinoplasty<sup>2</sup>. Ambro et al. reported these patients are unhappy with their prior rhinoplasty experience, and that the perception of a suboptimal result is both legitimate and real, even if the surgeon is not in agreement. Tantamount to any intraoperative technique, the preoperative ability of the surgeon to sift through the myriad of psychological and psychosocial issues is critical to achieving satisfactory outcomes for both the patient and surgeon<sup>3</sup>. In a previous study from our group, all patients undergoing rhinoplasty had a personality trait abnormality; the satisfac-

tion rate of rhinoplasty was 55.1%<sup>4</sup>. Sarwer et al. found that while body image dissatisfaction may motivate the pursuit of cosmetic medical treatments, psychiatric disorders characterized by body image disturbances, such as body dysmorphic disorder and eating disorders, may be relatively common among these patients<sup>5</sup>. Morselli reported that many patients were affected by dysmorphopathy in the preoperative period, and found that 75% of patients presented a psychiatric diagnosis according to the DSM-IV of the American Psychiatric Association<sup>6</sup>. Haas et al. found that body dysmorphic disorder, education and culture are also predicting factors in the decision to have cosmetic surgery<sup>7</sup>. Bellino et al. reported that the presence of a psychopathological reaction to imagined defects in appearance in subjects pursuing a surgical correction is associated with the severity of schizotypal and paranoid personality disorders. Preoperative assessment could help to define the clinical profile of patients in cosmetic surgery settings<sup>8</sup>. Veale found that patients with body dysmorphic disorder have a distorted image of their body, which may be associated with bullying or abuse during childhood or adolescence. Such patients have a poor quality of life, are socially isolated, depressed and at high risk of suicide. They often have needless dermatological treatments and cosmetic surgeries<sup>9</sup>. The present study investigated the mental health problems in people seeking rhinoplastic surgery.

## Materials and methods

In this case-control study, we assess the frequency of mental health problems among Iranians who wanted to undergo rhinoplasty compared to a control group using the General Health Questionnaire (GHQ)<sup>10</sup> and Dysmorphic Concern Questionnaire (DCQ)<sup>11</sup>.

The GHQ-28 includes 28 items that assess somatic symptoms, anxiety, insomnia, social dysfunction and severe depression. Each item has four possible responses, typically being 'not at all', 'no more than usual', 'rather more than usual', and 'much more than usual', scoring from 0 to 3, respectively. The total possible score on the GHQ-28 ranges from 0 to 84 and allows for means and distributions to be calculated, both for the global scale, as well as for the four sub-scales. A sensitivity of 89.5%, a specificity of 82% and a repeatability of 84% for the Persian version of the test have been reported<sup>12,13</sup>.

People who requested cosmetic rhinoplastic surgery in the Aria Educational Hospital of Mashhad Azad University of Iran were asked to participate in the study. Inclusion criteria were request for cosmetic rhinoplasty and consent for participation in the study. Exclusion criteria were presence of congenital diseases such as cleft palate or lip, history of facial trauma leading to deformities, presence of deformities in limbs, history of use of psychiatric medications and presence of prominent physical disease. Patients with known

severe neurologic or psychiatric disorders such as epilepsy or psychosis were also excluded, while cases with mild psychiatric disorders were not excluded. None of the cases or controls had previous rhinoplasty. The control group was selected from people without a request for plastic nose surgery who were matched with the study group for sex, age, educational level and socioeconomic status.

In the first part of the study, 20 people were studied as the pilot group. Based on this, with  $S^2 = 2.25$  and  $z = 1.96$ , the optimal sample of the study was calculated to be 49 with a significance of 95%.

Data on demographic variables, weight and height, skin colour, ethnicity, level of education, occupation, place of residence, birth order and socioeconomic level of the participants was collected. Participants were also asked about if they had undergone other plastic or rhinoplastic surgeries. Participants were asked to fill in the 28-item GHQ along with the 7-item DCQ<sup>11</sup>. In addition, all participants signed an informed consent form for participation in the study.

## Results

There were 44 women and 5 men in the study group, and 46 women and 4 men in the control group (Table I). The most common educational level for both groups was college and above, and both groups were matched for sex, age, level of education, occupation, birth order and socioeconomic level.

The average dysmorphic concern on DCQ was  $10.67 \pm 2.93$  and  $2.54 \pm 2.34$  for the study and control groups, respectively. There was a highly significant statistical difference between body dysmorphic disorder scores of the two groups ( $p = 0.0001$ ).

The results of the GHQ sub-scores are shown in Table II, where there was no significant difference between the two groups in the somatization subscore. However, the sub-scores for anxiety, depression and social-functional impairment were significantly higher in the study group. The total GHQ score was also higher in the study group.

## Discussion

The results of this study in an Iranian cohort are consistent with previous research in Western societies which found that body dysmorphic disorder and mental problems were more prevalent in candidates for rhinoplastic surgery. Scores in both DCQ and GHQ were significantly higher among people who were candidate for rhinoplastic surgery than the control group. The study group also scored higher in all sub-scales of GHQ but the somatization subscale. Although one would expect these subscores to be higher in the study group, the absence of this might be because people who had physical complaints were excluded.

Social function of people in the study group was found

**Table I.** Demographic data obtained from rhinoplasty and control groups.

	Rhinoplasty n (%) or mean $\pm$ SD	Control n (%) or mean $\pm$ SD
Gender		
Female	44 (89.80)	46 (92)
Male	5 (10.20)	4 (8)
Mean age (years)	24 $\pm$ 5	26 $\pm$ 5
Educational Level		
Grade school	1 (2.04)	2 (4)
High school	12 (24.49)	14 (28)
College graduate	36 (73.47)	34 (68)
Occupation		
Student	28 (57.14)	21 (42)
Employee	9 (18.37)	22 (44)
Housewife	2 (4.08)	2 (4)
Marketing	3 (6.12)	4 (8)
Unemployed	6 (12.24)	1 (2)
Worker	1 (2.04)	0 (0)
Socioeconomic status		
Lower	5 (10.20)	2 (4)
Middle	36 (73.47)	45 (90)
Upper	8 (16.33)	3 (6)

to be impaired more than in the control group. This finding is consistent with previous studies<sup>14</sup> and can be due to time-consuming involvement of patients with their appearance and time spent on applying cosmetics to correct the assumed defect<sup>14</sup>.

However, it can also be due to their lowered social self-esteem because of a negative self-image. Although the higher GHQ scores can be related to the effects of a negative self-image due to dissatisfaction with appearance, one can also suggest that a negative attitude toward appearance can be the physical expression of unconscious emotional problems, that at the same time produce some levels of depression and anxiety.

An important difference of our study with others is that most of the cases in our study were women. This is because women in Iran seek cosmetic plastic surgery more often than men, in contrast to other countries.

**Table II.** GHQ sub-scores for the rhinoplasty and control groups.

GHQ sub-scores	Rhinoplasty	Control	T-test p value
Somatization	5.75 $\pm$ 4.21	4.42 $\pm$ 2.66	0.6
Anxiety	6.59 $\pm$ 4.64	4.54 $\pm$ 2.85	0.009
Social dysfunction	7.75 $\pm$ 2.98	5.43 $\pm$ 2.63	0.001
Depression	3.51 $\pm$ 4.88	1.54 $\pm$ 1.88	0.009
Total GHQ	23.61 $\pm$ 12.55	15.92 $\pm$ 6.74	0.0001

Like previous studies, the results of this study show the importance of mental health assessment of patients who seek plastic surgical treatments. As it is already shown, people with body dysmorphic disorder request more plastic surgical treatments than other people. However, the rate of dissatisfaction after surgery is significantly higher in these individuals. They also sue their surgeons more than others due to this dissatisfaction.

Body dysmorphic disorder can be treated with psychotherapy, medication, or both. Cognitive behavioural therapy (CBT) and selective serotonin reuptake inhibitors (SSRIs) are effective in treating body dysmorphic disorder, and their combination is more effective than either alone<sup>15</sup>.

One limit of this study is the lack of any structured psychiatric assessment by instruments such as the SCID. We did not make diagnoses according to DSM-IV criteria or make use of DSM-IV-derived diagnostic tools, which limits our findings. Additionally, the level of dissatisfaction of patients undergoing rhinoplastic surgery was not assessed using specific instruments. Patients with known severe neurologic or psychiatric disorders such as epilepsy or psychosis were also excluded, and groups were not matched according to the size and shape of nose. Furthermore, no assessment of DCQ after surgery was made, which should be considered in future studies. Moreover, individuals with apparently malformed nose (from cosmetic view) were not included in the case group which limits the study results. Lastly, patients were not checked to fulfil the first criteria of body dysmorphic disorder, but were only verified to have no apparent nose malformation (cosmetically).

## Conclusions

In conclusion, it is suggested to verify mental health status of people who seek plastic surgical treatment using proper and valid methods (such as DSM-IV criteria and DCQ) before plastic surgery. Furthermore, if there are positive findings in these tests, psychiatric treatment should be provided before surgical treatment. This will decrease the rate of unnecessary plastic treatments.

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