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Body Dysmorphic Disorder in Females Seeking Aesthetic Dermatology Minimally Invasive Cosmetic Procedures

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ABSTRACT

Background: Body image is defined as the internal representation of person's external appearance and it plays a significant role in quality of life and self-esteem of individuals. Body Dysmorphic Disorder (BDD) affects 1-2% of general population. Patients with BDD report significant dissatisfaction with their external appearance and represent about 5-15% of individuals seeking aesthetic interventions.

Objective: The aim of this study was to estimate rates of BDD in females seeking aesthetic dermatology services in Egyptian culture in a step to raise awareness about BDD in dermatology practice.

Patients and Methods: we recruited 150 female subjects from those seeking different aesthetic dermatology interventions from dermatology clinics in Minia governorate. Our study is a cross sectional study that involved collecting data about sociodemographic and illness related characteristics, history taking and clinical examination. The tools applied to participants were the Body Dysmorphic Disorder Questionnaire, the Body Dysmorphic Disorder modification for Yale-Brown Obsessive-Compulsive Scale (Adult version) and the Body Dysmorphic Disorder modification for Yale-Brown Obsessive Compulsive Scale (Adolescent version).

Results: The most common age group was 25-35 years representing 42.7% of the sample. Based on BDD-YBOCS results, 62% of our sample screened positive for BDD while lower rates of BDD were found based on Body Dysmorphic Disorder Questionnaire (BDD-Q).

Conclusions: Patients with BDD frequently present to aesthetic dermatology settings. Rates of BDD in aesthetic dermatology seekers are high reaching up to 62%. It is important to screen all persons seeking aesthetic interventions for BDD.

Keywords: Aesthetic dermatology, Body dysmorphic disorder, Cosmetic.

INTRODUCTION

Body image is defined as the internal representation of person's external appearance [(1)] and it plays a significant role in quality of life and self-esteem of individuals and its multidimensional construct involves, thoughts, perceptions, feelings as well as behaviors related to physical appearance[(2)]. Patients who are significantly and extremely unsatisfied with their external appearance and body image with associated impairment in their daily functioning are known to be suffering from Body Dysmorphic Disorder (BDD)[(2)].

BDD is a psychiatric condition involving distressing preoccupation with slight or imagined defects in external appearance with accompanying repetitive behaviors and occasionally poor insight regarding these beliefs. Although, BDD is relatively common and leads to functional impairment, its diagnosis is sometimes missed[(3)]. BDD patients believe that they are ugly, unattractive and deformed. These cognitive distortions develop to distressing difficult to suppress obsessional thoughts. In average, patients spend from three to eight hours per day in worries regarding their appearance. In psychiatric settings, about half of BDD patients have unshakable beliefs about their appearance reaching a delusional level [(4)].

Not only patients with this severe and under diagnosed psychiatric condition seek advice from cosmetic dermatologists[(5)], but also they prefer and like to be seen by dermatologists [(6)]. Aesthetic interventions are usually not successful in satisfying or improving the suffering of patients with BDD. Moreover, they often have negative consequences on the overall wellbeing of patients. Aesthetic interventions usually prove no benefit for BDD patients, because even the results are good, they are not good enough, and the obsessional thoughts are still there. And, if aesthetic intervention physically corrected a defect, satisfaction is temporary, as obsessions may shift to other parts of the body with worsening of symptoms [(7)].

Screening for BDD by dermatologists is of paramount importance. Dermatologists should ask patients with minimal or non-existing defects about how much time each day they spend in thinking about their defects and how much such concerns cause distress or interfere with functioning. Patients who are concerned and preoccupied with perceived defects, spending at least one hour thinking about them and their concerns lead to functioning impairment or clinically significant distress should be considered for BDD diagnosis [(8)]. Pre intervention screening is also important in determining patient's motivations to and expectations of intervention and that they are realistic. Furthermore, screening helps in identifying patients with body dysmorphic disorder or any other psychiatric disorder that may contraindicate procedure [(9,10)].

The aim of this study was to estimate rates of BDD in females seeking aesthetic dermatology services in Egyptian culture in a step to raise awareness about BDD in dermatology practice.

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PATIENTS AND METHODS

This cross sectional study was conducted in Minia University Hospital. Aim of the study was discussed and explained to Dermatology Department team who helped us in recruiting participants seeking aesthetic dermatology services. We recruited 150 150 (144 adults and 6 adolescents) female participants from Dermatology outpatient clinics who met our inclusion criteria.

Inclusion criteria: Female patients seeking aesthetic dermatology services, and agreed to participate in the study.

Exclusion criteria: Refusal of the patient to participate in the study, and patient who was suffering from any major psychiatric disorder.

Tools of the study:

A) The Body Dysmorphic Disorder Questionnaire (BDD-Q)[(7)]:

The BDD-Q is a brief, validated self-administered questionnaire that is used to identify patients having symptoms of BDD; it has been extracted from BDD criteria of Diagnostic and Statistical Manual of Mental Disorders (DSM-V). It uses close-ended questions and identifies if participants' concerns regarding appearance are a source of preoccupation. It also identifies the grade of distress or interference with social and occupational functioning caused by these concerns [(7)]. It has good validity, high sensitivity (100%) and specificity (89-93%) for screening for BDD in cosmetics clinics [(11)].

BDD diagnosis is likely if answers to question (1) (preoccupation) are yes to both parts, answers to question (3) (significant stress) include yes to any of the questions and answers to question (4) (time spent thinking about defect) include b or c choices [(7)].

B) Body Dysmorphic Disorder modification for Yale-Brown Obsessive Compulsive Scale (BDD-YBOCS) [(12)]:

It was derived from the Yale-Brown Obsessive Compulsive Scale (Y-BOCS) [(13)]. The BDD-YBOCS is a semi-structured, 12-item clinician-rated tool developed to measure severity of BDD symptoms in persons having subjective distress and excessive preoccupation with physical appearance. The 12 items are rated on a 0-4 scale, 0 represents no symptoms and 4 represents extreme BDD symptoms. The first 10 items assess obsessions, excessive preoccupation, and compulsive behaviors related to physical appearance dissatisfaction. The first 3 items are based on the diagnostic criteria of BDD and assess preoccupation, subjective distress and impairment of functioning that are related to compulsive behaviors and excessive preoccupation. Items 11 and 12 assess insight and avoidance respectively [(12)].

Ethical consideration:

All participants provided a written informed consent before enrollment in the study. The approval to conduct this study has been obtained from Minia University Academic and Ethical Committee. This study has been carried out in accordance with The Code of Ethics of the World Medical Association for studies involving humans (Declaration of Helsinki). The participants had the right to withdraw from the study at any stage without any negative consequences.

Statistical analysis

The collected data were coded, processed and analyzed using the SPSS (Statistical Package for the Social Sciences) version 22 for Windows® (IBM SPSS Inc, Chicago, IL, USA). Qualitative data were represented as frequencies and relative percentages.

RESULTS

We had a total sample of 150 female participants who were seeking aesthetic dermatology services. The most common age group was 25-35 years representing 42.7% of the sample followed by 15-25 years' group. More than half of them were singles, living in urban areas and were not working at time of the study (Table 1).

Table (1): Sociodemographic characteristics of the studied sample (N=150)

Variable	Categories	Frequency (150)	Percent %
Age	15- 25 years	58	38.7
	25-35 years	64	42.7
	35-45 years	16	10.7
	45-55 years	12	8.0
Marital Status	Single	80	53.3
	Married	63	42.0
	Divorced	5	3.3
	Widow	2	1.3
Residence	Urban	100	66.7
	Rural	50	33.3
Current Working Status	Currently Working	46	30.7
	Currently not Working	104	69.3

Responses of participants to BDD-Q were interesting as all participants reported that they were worried about how they look and think about their appearance problems a lot. About one third reported concern about getting too fat. 79.3% reported that the problem of their look upsets them a lot and 70.7% reported that the problem of their look affected their friendship, dating, relationships and social activities. 62.7% of participants reported avoidance and 27.3% reported that they spend more than 3 hours per day thinking about how they look (Table 2).

Table (2): BDD symptoms as measured by Body Dysmorphic Disorder Questionnaire (BDD-Q) (N=150)

BDD Domains	Number	Percent
1. Are you very worried about how you look?		
Yes	150	100%
No	0	0%
If yes: Do you think about your appearance problems a lot and wish you could think about them less?		
Yes	150	100%
No	0	0%
2. Is your main concern with how you look, that you aren't thin enough or that you might get too fat?		
Yes	52.0	34.7%
No	98.0	65.3%
3. How has this problem with how you look affected your life?		
3.a Has it often upset you a lot?		
Yes	119.0	79.3%
No	31.0	20.7%
3.b Has it often gotten in the way of doing things with friends, dating, relationships or social act?		
Yes	106.0	70.7%
No	44.0	29.3%
3.c Has it caused you any problems with school, work or other activities?		
Yes	19.0	12.7%
No	131.0	87.3%
3.d. Are there things you avoid because of how you look?		
Yes	94.0	62.7%
No	56.0	37.3%
4. How much time a day do you usually spend thinking about how you look?		
Less than 1 hour a day	85.0	56.7%
1-3 hours a day	24.0	16.0%
More than 3 hours a day	41.0	27.3%

Regarding BDD-YBOCS scores, severe and extreme scores combined were reported in the domains of "time occupied by thoughts" (25.7%), interference due to thoughts (20.1%), distress associated with thoughts (22.2%), interference due to activities related to body defect (23.7%), distress associated with activities related to body defect (30.5%) and avoidance in 16.7% of the sample (Table 3).

Table (3): BDD symptoms as measured by Body Dysmorphic Disorder modification for Yale-Brown Obsessive Compulsive Scale (BDD-YBOCS)

	None N (%)	Mild N (%)	Moderate N (%)	Severe N (%)	Extreme N (%)
Time occupied by thoughts about body defect	3 (2.1%)	79 (54.9%)	25 (17.4%)	21 (14.6%)	16 (11.1%)
Interference due to thoughts about body defect	44 (30.6%)	46 (31.9%)	25 (17.4%)	17 (11.8%)	12 (8.3%)
Distress associated with thoughts about body defect	13 (9%)	40 (27.8%)	59 (41%)	18 (12.5%)	14 (9.7%)
Interference due to activities related to body defect	61 (42.4%)	31 (21.5%)	18 (12.5%)	25 (17.4%)	9 (6.3%)
Distress associated with activities related to body defect	52 (36.1%)	20 (13.9%)	28 (19.4%)	16 (11.1%)	28 (19.4%)
Avoidance	62 (43.1%)	37 (25.7%)	21 (14.6%)	22 (15.3%)	2 (1.4%)

As regard time spent in activities related to body, participants reported spending more than 8 hours per day in the domains of camouflaging with clothing/other cover (14.6%), picking at skin (10.4%) and checking mirrors/other surfaces (5.6%) of participants. While participants reported spending 3-8 hours per day in the domains of camouflaging with clothing/other cover (11.8%), scrutinizing others' appearance (comparing) (6.3%), checking mirrors/other surfaces (4.9%) and picking at skin (4.2%) of participants (Table 4).

Table (4): The time spent in activities related to body as measured by Body Dysmorphic Disorder modification for Yale-Brown Obsessive Compulsive Scale (BDD-YBOCS)

		None ----	Mild < 1 hour	Moderate 1-3 hours	Severe 3-8 hours	Extreme > 8 hours
Checking mirrors/other surfaces	**N** **%**	6 (4.2%)	93 (64.6%)	30 (20.8%)	7 (4.9%)	8 (5.6%)
Grooming activities	**N** **%**	7 (4.9%)	123 (85.4%)	12 (8.3%)	2 (1.4%)	0 (0%)
Applying makeup	**N** **%**	70 (48.6%)	59 (41%)	10 (6.9%)	5 (3.5%)	0 (0%)
Excessive exercise (time beyond 1 hr. A day)	**N** **%**	87 (60.4%)	37 (25.7%)	19 (13.2%)	1 (0.7%)	0 (0%)
Camouflaging with clothing/other cover	**N** **%**	49 (34%)	37 (25.7%)	20 (13.9%)	17 (11.8%)	21 (14.6%)
Scrutinizing others' appearance (comparing)	**N** **%**	34 (23.6%)	81 (56.3%)	17 (11.8%)	9 (6.3%)	3 (2.1%)
Questioning others about appearance	**N** **%**	72 (50%)	60 (41.7%)	10 (6.9%)	2 (1.4%)	0 (0%)
Picking at skin	**N** **%**	76 (52.8%)	33 (22.9%)	14 (9.7%)	6 (4.2%)	15 (10.4%)
Other: playing with hair	**N** **%**	132 (91.7%)	5 (3.5%)	2 (1.4%)	2 (1.4%)	3 (2.1%)

According to BDD-YBOCS scores, 93 participants (62%) were diagnosed with BDD; 38 with mild, 18 with mild to moderate, 7 moderate, 8 moderate to severe, 9 severe, 8 severe to extremely severe and 5 participants were diagnosed with extremely severe BDD (Table 5 and Fig. 1).

Table (5): Diagnosis and severity of BDD as measured by Body Dysmorphic Disorder modification for Yale-Brown Obsessive-Compulsive Scale (BDD-YBOCS)

BDD Diagnosis and severity	Total score of the first 3 items of BDD-YBOCS	Number
Mild BDD	4 or 5	38
Mild to moderate BDD	6	18
Moderate BDD	7	7
Moderate to severe BDD	8	8
Severe BDD	9	9
Severe to extremely severe BDD	10	8
Extremely severe BDD	11 or 12	5

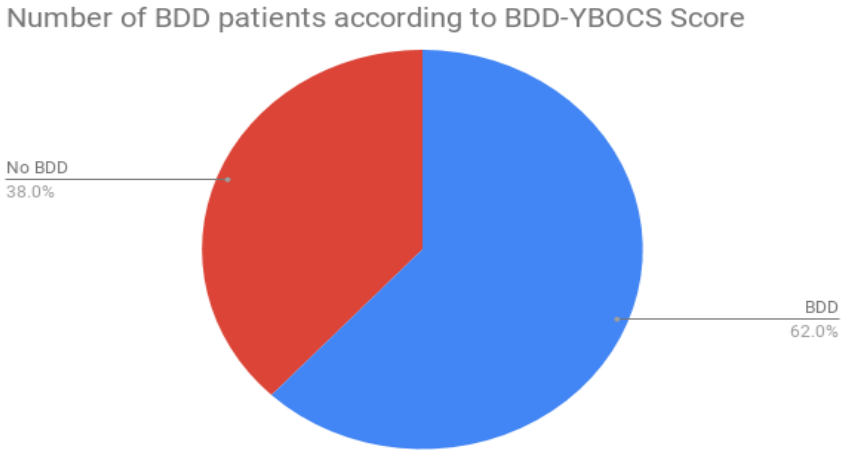

Figure (1): Prevalence of BDD in the whole sample as measured by BDD-YBOCS

When we looked at the degree of participants' control over compulsive behaviors, we found that 41% reported complete control, 21.5% much control, 6.3 moderate control, 11.1% little control while 20.1% of participants reported no control over their compulsive behaviors related to body image (Fig. 2).

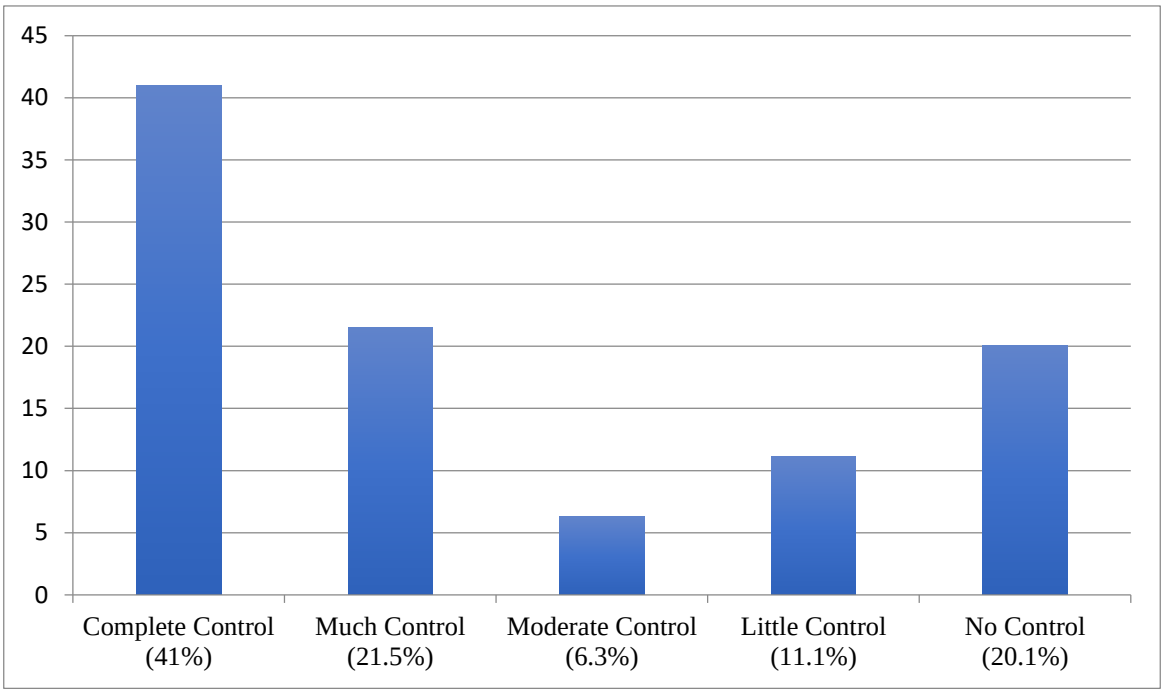

Figure (2): Degree of control over compulsive behavior (% of participants)

Moreover, insight about thoughts related to body image was reported as excellent (67.4%), good (19.4%), fair (3.5%), poor (6.9%) while 2.8% of participants reported lack of insight about thoughts related to their body image (Fig. 3).

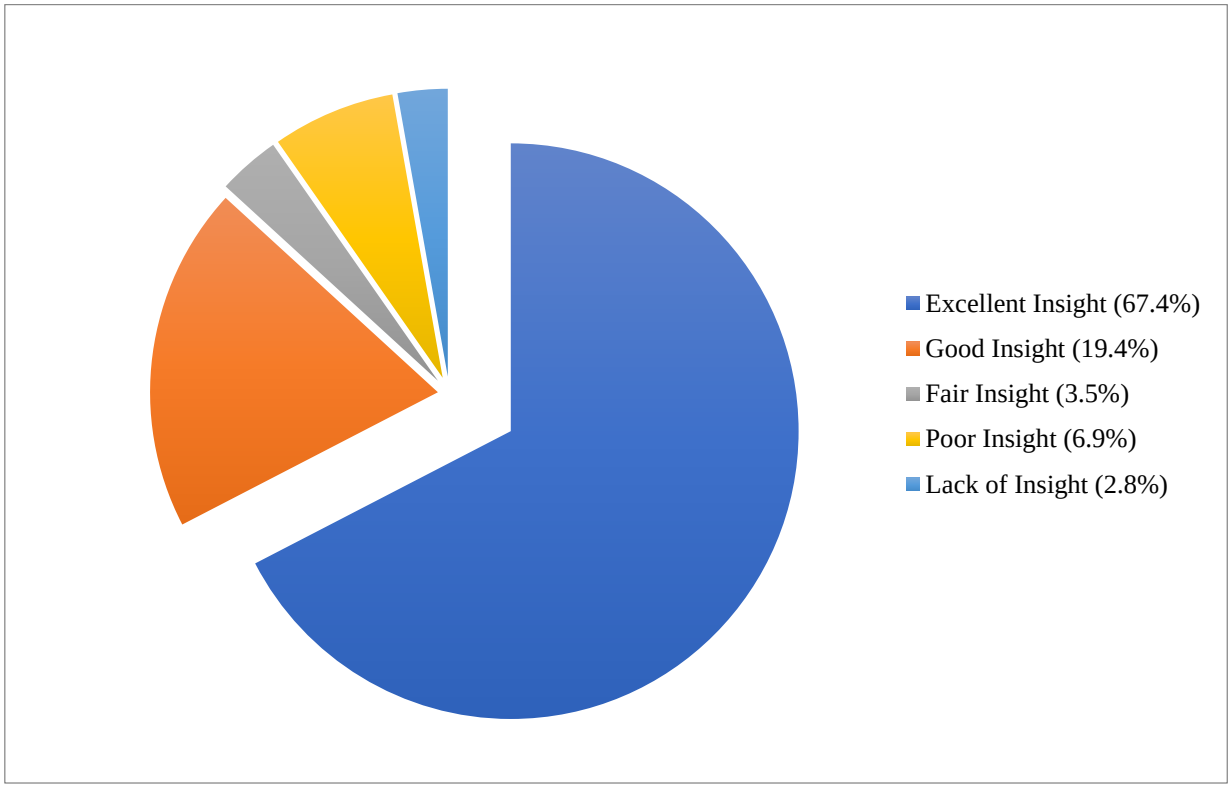

Figure (3): Insight about thoughts related to body image (% of participants)

DISCUSSION

Our objective was to study the prevalence of Body Dysmorphic Disorder in females seeking aesthetic dermatology minimally invasive procedures. For achieving that objective, we recruited 150 (144 adults and 6 adolescents) female participants where we applied two well-known valid tools to them to detect those having BDD from its mild to extremely severe forms. The first tool was The Body Dysmorphic Disorder Questionnaire (BDD-Q) while the second was The Yale-Brown Obsessive-Compulsive Scale Modified for Body Dysmorphic Disorder (BDD-YBOCS), adult and adolescent versions.

Our choice of The Body Dysmorphic Disorder Questionnaire was based on the conclusions of previous studies reporting that Body Dysmorphic Disorder's correct diagnosis can be aided by the use of screening tools as The Body Dysmorphic Disorder Questionnaire that has high sensitivity and specificity in BDD detection [11, 14].

The interpretation of the results of BDD-Q in our study was in agreement with **Phillips**[7] who reported that BDD diagnosis is likely if answers to question (1) (preoccupation) are yes to both parts, answers to question (3) (significant stress) include yes to any of questions and answers to question (4) (time spent in thinking about defect) include b or c choices.

In the current study, responses of participants to question (1) were 100% yes for both parts as all participants reported preoccupation and worry about how they look. Responses to question (3) sub items were yes in 79.3%, 70.7%, 12.7% and 62.7% of participants (yes to any of them was sufficient). Moreover, in question (4) choices b (1-3 hours a day) and c (more than 3 hours a day) represented 16% and 27.3% of participants respectively with a sum of 43.3% of participants.

Based on the scores of The Body Dysmorphic Disorder version of the Yale-Brown Obsessive–Compulsive Scale (BDD-YBOCS), 93 out of 150 participants were found to be having BDD from its mild to extremely severe forms, surprisingly this number exceeded the number screened positive based on the hours that the participants spent thinking about their body defect.

Our rates of participants who screened positive for BDD are in line with previous studies that concluded that BDD patients seek aesthetic and cosmetic treatments more frequently than they seek psychiatric treatments and about 71-76% of BDD patients sought of while 64-66% received aesthetic treatments [6, 15]. Moreover, our results are in agreement with results of previous studies that revealed that the frequency of BDD is high in aesthetic dermatology settings with rates as high as 53.6% [16-18].

Our figures of participants who screened positive for BDD in our sample are higher than figures reported by previous studies as it was found that 11.9% of patients presenting to dermatologists screeened positive for BDD[5] and 25% of patients who were seeking rhinoplasty as a cosmetic procedure met BDD DSM-IV-TR diagnostic criteria and 20% met diagnostic criteria of obsessive compulsive disorder (OCD) [19]. These differences in rates of BDD may be due to nature of the sample in our study as all patients were seeking aesthetic dermatology services in comparison to general dermatology services in Phillips's study[16]. Furthermore, in the rhinoplasty study 20% met criteria for OCD that is related in its core symptoms to BDD and there was methodological differences between our and their study.

In agreement with **Dufresne *et al.*** [8], **Sarwer *et al.*** [9] **and Sarwer** [10] and because of the magnitude of the problem of BDD in aesthetic dermatology settings, the poor outcome of aesthetic procedures when performed to BDD patients, and the impact of this poor outcome on the psychological condition of those vulnerable patients, it is very important to screen for BDD in all individuals seeking aesthetic dermatology procedures to determine patient's motivations to and expectations of intervention and then to refere those who screen positive to psychiatric services. Furthermore, aesthetic and cosmetic services should be offerred through a multidiciplinary team including aesthetic dermatologist/surgeon, psychiatrist and psychologist.

CONCLUSIONS

Patients with BDD frequently present to aesthetic dermatology settings. Rates of BDD in aesthetic dermatology seekers are high reaching up to 62%. It is important to screen all persons seeking aesthetic interventions for BDD.

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Author contribution: Authors contributed equally in the study.

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