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# Body Dysmorphic Disorder: Characteristics, Psychopathology, Clinical Associations, and Influencing Factors

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## Abstract

Body dysmorphic disorder (BDD) is defined by a recurring and persistent concern characterized by psychic suffering caused by a possible physical imperfection in appearance. It is a severe psychiatric condition, duly confirmed by neuroanatomical findings, very peculiar repetitive behaviors, and specific personalities. The prevalence of BDD is increasing around the world and differs between countries, because of cultural differences and different health-care systems. This increase is worrying because BDD is a pathology that presents comorbidity like severe depression, suicidal ideation, and functional and social impairment. However, BDD is an unrecognized and often not diagnosed in our society. Many patients are ashamed of their complaints and do not usually seek psychiatric help with ease, and unfortunately, they seek help in cosmetic and surgical treatments to improve their appearance, and these professionals are not yet prepared to assist in the diagnosis of this disorder. Therefore, this chapter presents not only the psychopathology of BDD but also its associations with other pathologies and their main factors of influence. Finally, we present a clinical experience with a detailed description of a clinical case. The aim is to contribute to the diagnosis and treatment of this pathology and also to future research that may benefit society and these patients.

**Keywords:** body dysmorphic disorder, appearance disorders, social anxiety disorder, obsessive-compulsive disorder, behavior

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## 1. Introduction

In the context of a society where beauty is directly related to success and simultaneously hard to achieve, this is the background for the manifestation of the most of the appearance disorders. Among them, we observe the body dysmorphic disorder (BDD), classified as the most fragilizing and afflictive pathology related to body image [1–3].

The body dysmorphic disorder (BDD), previously denominated as dysmorphophobia, consists in a severe psychiatric condition, with high incidence and frequently incapacitating. It is characterized by psychic suffering caused by a possible physical imperfection in appearance, always focused in a specific body part, as a common example, nose, hair, freckles, or breast size. Any part can or body characteristic can be the focus, including the presence of body hair excess or the body shape as a whole [4–6].

Although BDD is an unrecognized and often not diagnosed in our society, it causes significant clinical suffering to the patient, social, and professional prejudice and affects others spheres of the individual life. Nowadays, new characteristics have been added to the disorder as repetitive behavior and mental acts related to self-image preoccupation. To acquire a better knowledge and help in BDD diagnosis should be a priority, not only for psychological and psychiatric professionals but also for aesthetical, cosmetic, and physical educators, because these patients may search for the solution with appearance-enhancing treatments, an action that can worsen the psychological symptoms caused by the disorder [7, 8].

## 2. Definitions and characteristics

BDD is defined by a recurring and persistent concern about a specific trait or a group of characteristics, noticed in the self-image. The etiology is associated to a perfectionist pre-morbid personality, teasing in school, or a traumatic event. Recent research suggests that more than three-quarters of individuals with BDD reported a perception of childhood maltreatment [2]. The patient relates that these traits are ugly, unattractive, abnormal, or even crippled. The self-noticed flaws are not necessarily bad or abnormal to other individuals. These appearance concerns range from seem unattractive or inappropriate, to horrible, repulsive or often described as monstrous. Patients can focus in specific details or several parts. It is very frequent that the skin is the focus of the disorder, for example, acne, scars, wrinkles, pale skin, or body hair, characteristics of hair, hair loss, and unwanted facial hair, nose (size and shape). However, any part can be the focus of this disorder. Some even present concern about the perception of asymmetry of body parts. The perceptions are intrusive, unwanted, and take time (about 3–8 h a day); it is usually hard to avoid or control [9–11].

The BDD can be classified according to the level of insight. In the good or reasonable insight, the individual can recognize that the beliefs of BDD may not be true. In the case of poor insight, the individual believes that it is most likely true. In the absence of an insight or a

delusional state, the individual is completely convinced that his/her beliefs are true. The degree of compromise affects the treatment of the patient [9, 12].

BDD can also be divided into delusional and not delusional. The delusional type is more severe because the individual presents visual hallucinations, in which he/she perceives his/her defect as monstrous, whereas in the non-delusional mode, the subject only overevaluates a little imperfection, which was already there. It is believed that 36–60% of the cases of BDD are delusional [13]. However, both BDD delusional and non-delusional usually have good treatment response to the same type of therapeutic. Nevertheless, it is important to establish the differential diagnostics in order to determine the severity of the disease, the comorbidities, and the risk factors [13, 14].

Some variations were found in brain structure and function. Research suggests that BDD patients may have some alteration in the white substance of the brain, leading to a functional impairment due to disorganization in the tract which connects the vision with emotional issues and memory [13, 15].

BDD, which was primarily called dysmorphophobia, is a severe psychiatric disorder usual and disabling. It is marked by deep psychological sorrow, directly proportional to the imaginary or delusional physical defect. This “defect” is always focused in a given area of the body, such as, nose, hair, freckles, or breasts. Any part of the body can be “chosen”; it can include the presence of unwanted body hair or the body weight or the body shape [4–6].

Even though BDD being still an underrecognized and underdiagnosed pathology in our society, it causes too much pain, social, and professional impairment to the patients. It affects another important area of their lives too: most of them have deep emotional issues and cannot keep a marriage or a long-term relationship because of BDD. Recently, some repetitive behaviors and mental acts related to appearance concerns were added to the list of symptoms too [8, 9].

Most of these patients look for appearance-enhancing treatments, trying to get rid of their sorrow and frustration, but it usually exacerbates the psychological symptoms and leads to more dissatisfaction [7, 8]. Therefore, it is paramount that not only psychologists and psychiatrists know more about BDD, but also, professionals of esthetics area, cosmetology and gyms, which include alternative specialty doctors, physiotherapists and personal trainers. They could identify potential patients and referral to specialized treatment.

### **3. Neuroanatomic findings**

In the past, BDD used to be part of somatoform disorder spectrum [16], which now is known as somatic symptoms disorders [9]. This spectrum is featured by the presence of physical symptoms, which suggests a medical general condition underlying the behavior symptoms, because there is no detectable neurobiological imbalance or other psychiatry disorders to justify the symptoms. It is important to emphasize that this classification has changed much and do not include BDD anymore [9].

Nowadays, BDD has been included in the range of obsessive compulsive disorders (OCDs), because the neuroanatomic findings presented new evidences about BDD, pointing biological features to its etiopathogeny. One study detected that orbitofrontal cortex and anterior cingulate cortex volumes of BDD patients were significantly smaller than healthy individuals. It means that their brain has more white substance than the control group. Besides, there is a tendency of an increase of thalamic volume in BDD patients compared with that in the control group [17, 18].

Neuroanatomic evidence in the limbic system was also found, more specifically in the amygdalas, between BDD, anxiety, and self-evaluating visual process. Self-image is captured by ventral visual system, which is later interpreted by the brain's amygdalas. That structure is involved in emotional control in a higher level, like companionship, love, affection, mood swings, fear, rage, and hostility. They are involved in some anxiety manifestations too. Interestingly, only the right amygdala volume has shown a significant correlation with BDD symptom severity, which suggests a different lateral involvement of these brain regions [19].

One study conducted by researchers at the University of California, Los Angeles, shows that people with BDD may process visual information differently than people without the disorder. Researchers showed 25 people, half with BDD and half without the disorder, three different images of faces in high, regular, and low resolutions. Magnetic resonance image (MRI) results showed that participants with BDD used the left side of the brain (the analytical side) to process all three images. The other participants used the brains' left hemisphere for only the high-resolution images. This could mean that the minds of people with BDD strive to acutely process visual details, even when there is nothing to process. This might be why they can see flaws in themselves, even when those flaws might not exist [20].

Another biological factor under consideration is that people with BDD seem to have a chemical imbalance of the neurotransmitter serotonin, because they often respond well to the selective serotonin reuptake inhibitor (SSRI) class of antidepressants. While doctors know that the differences in brain and neurotransmitter functions exist, they do not know whether BDD causes the differences or if the differences cause BDD. For this reason, it is so important to know and to analyze the other factors involved in BDD [21].

#### **4. Behavior and personality of the BDD patient**

Currently, there are many studies comparing BDD patients' behavior with personality. These are very important clinical evidences of the disorder. As said before, BDD patients usually have perfectionist personality, as a natural trait or a pathological feature; between them, it is possible to observe a very large range of anankastic (obsessive) behaviors, according to each affected individual. Nevertheless, when the BDD is already detected, the patient is very often anguished, afflicted, and tormented; they have social, emotional, and labor impairment. They have maladapted thoughts about their appearance: "if I'm not good looking, I can't be happy." That kind of thought leads to negative self-evaluation, which provokes specific

behavior known as repetitive acts. Some studies sustain that 90% of people with BDD engage in compulsive behaviors [10, 22].

Among the repetitive acts of compulsive behavior of BDD patients, there are check, camouflage, dressing-up excessively, and self-mutilation. In check behavior, patients spend most of their time checking their own image in front of the mirror; it is known as "mirror checking" or "mirror gazing." Around 80% of people with BDD usually have mirror gaze behavior. There are reports of patients who can spend 11 h per day looking themselves at the mirror [23]. It can be explained as a cycle, and it begins when a person views an external or an internal representation of their appearance. External events include looking at a mirror. Internal events include somatic sensations or intrusive thoughts. Such events activate a distorted mental image or a "felt" impression of the self. People with BDD selectively focus on this image, which leads to a magnification of perceived imperfections. It showed that people with BDD endorse assumptions such as "if my appearance is inadequate, life is not worth living." Negative assumptions result in rumination, decreased mood, and safety behaviors such as mirror gazing, which uphold the distorted mental image, increase doubts, and reinforce the cycle [24]. The mirror checking is perceived as being uncontrollable, addictive, and trapping. On a "bad day," motivations for mirror gazing are punitive and tortuous as patients usually report. Some patients describe what they see in the mirror by comparing themselves to inanimate creatures like monsters [10].

In the camouflage, patients waste too much time trying to hide the defect [3, 25, 26]. It includes the habit of buying compulsively objects like make-up items, scarfs, and so on [19, 27]. In the dressing-up excessively, patients spend most of the day beautifying themselves and trying to look better. They imagine that people are constantly observing and evaluating them; this feeling creates a great emotional pain and functional impairment [28].

The self-mutilation behavior is considered the most severe and harmful of the symptoms. A typical self-mutilation injury is called neurotic excoriations (or pathological skin picking), which is defined for the irresistible impulse of causing or worsening skin damage, by scratching, biting, clawing with nails, fingers, or objects. The self-mutilation can be used to provoke the amputation of the "ugly" part of the body [29, 30]. The lesions are polymorphic. Newer lesions are angulated excoriated crusted erosions, while older lesions have depigmented scarred center and hyperpigmented periphery. Lesion numbers vary from few to hundred and are in all stages of development. Prurigo nodularis is an extreme variant of this entity. Distribution of the lesions reflects their self-inflicted nature with lesions concentrated over the most accessible sites. Neurotic excoriation is differentiated from dermatitis artefacta by its conscious and compulsive nature. However, a patient should be evaluated for all cutaneous and systemic causes of pruritus before making this diagnosis [31].

Acne excoriee is a variant of neurotic excoriation where patients have either only facial or predominant facial involvement. Few patients develop lesions after picking acne lesions while majority did not have acne at any time. It is most common in females with an average age of 30 years. Another very common habit is "tricolomania," which is characterized by the act of, recurrently, pulling the own hair or body hair, for pleasure, satisfaction, or tension relief. The most usual areas are scalp, eyelashes, and eyebrow. This behavior pattern is relevant only if it

is frequent enough to cause injuries or irreversible hair loss or diary. Normally, it is followed by the attempt of hiding the injuries. There is a female preponderance, and the average age of onset of this syndrome varies between 30 and 50 years [29, 31].

There is an important trait of BDD, established by essays, which is the capability of these individuals of observing “irregularities and defects” in their own appearance. Any minimal asymmetry can be the starter for the development or worsening of the disease. Only patients with BDD may have such a powerful intensified selective attention able to find or imagine defects on their own face. Moreover, it also happens with another person’s body’s area, for example, the defect they imagine on him/her and they also observe too much in the others [33]. Indeed, the symmetry obsession is considered one of the most obvious traits of the BDD, and very often, it is found in OCD patients, who suffer from a chronic and disabling disorder characterized by uncontrollable, persistent, and repetitive obsessions and compulsions. Around 25% of BDD patients present this symptom, and it has a direct impact in the low quality of life of these individuals [27].

BDD is also characterized by mental acts, in which the patient wastes most of his/her time thinking about his/her appearance or concerned about it; in addition to it, the person cannot stop comparing his/her appearance with the others [8]. Unwanted mental intrusions might be a transdiagnostic variable across different disorders such as OCD, BDD, eating disorders, and hypochondriasis, and they might contribute to explaining the phenomenological similarities among them. Unwanted mental intrusions in BDD have been defined as discrete, untimely, and unexpected conscious cognitive products that can be experienced as thoughts, images, sensations, or impulses. They interfere with the normal flow of thoughts, tend to be recurrent, and promote subjective resistance efforts, although they are highly uncontrollable [33].

Still regarding personality, individuals with BDD have been postulated to have schizoid, narcissistic, and obsessional personality traits and to be sensitive, introverted, perfectionist, and insecure. However, data on personality traits and disorders in BDD are limited. In one research involving patients diagnosed with BDD, 57% had one or more personality disorders, with avoidant personality disorder (43%) being most common, followed by dependent (15%), obsessive–compulsive (14%), and paranoid (14%) personality disorders [34, 35]. In another assessment in patients seeking cosmetic surgery and diagnosed with BDD, it was also found 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 [36].

In another trial, more recent, three groups of personality were verified in patients diagnosed with BDD. The first group includes pessimistic, shy, insecure subjects; people with fragile and immature personality and poor self-esteem; individuals concerned about the way they look and those who spend more time thinking about it. The second group includes subjects that are more confident, with a stronger personality and a greater self-esteem. A third, less differentiated group, includes subjects who are more impulsive and spend an intermediate amount of time thinking about the way they look [37].

An antisocial personality can also be attributed to BDD. Clinical observations suggest that both BDD and social anxiety disorder (SAD) are characterized by a fear of negative evaluation in social situations, as well as avoidance of social interactions, although in BDD, social fear and avoidance are largely related to the perceived bodily “defects.” Individuals with BDD also have a tendency to misinterpret neutral interpersonal cues as more negative and threatening when compared to healthy controls. Moreover, the high SAD comorbid rates in BDD (37–40%) suggest that BDD and SAD may be related disorders [38, 39].

## **5. Prevalence, comorbidities, influencing factors, and association with other disorders**

The prevalence of BDD is increasing around the world. Prevalence in the general population may differ between countries, because of cultural differences and different health-care systems. Studies have found a BDD prevalence of 1.9 in German women [40]; 2.5% in American women [41]; 2.0% in American women in another time frame [42]; 4.4% in German women in another time frame [43]; 2.1% in Swedish women [8]. In mixed populations (both genders), the prevalence of BDD was 1.7% in English population and 2.4% in French population [44]; 0.7% in Italian population [45], and around 28% in the population of American college students [48]. In the worldwide population, the prevalence of BDD is around 1–2% [3, 14, 46]; it can reach 3% of global population [25]. In the dermatological patient population, the prevalence is predominantly higher, with 8.8% of Turkish dermatology patients [47]; 14% of US dermatology patients [8]; 6.7% of Brazilian dermatology patients [48]; 4.2% of Turkish dermatology patients in another time frame [49]; 4.9% of Swedish dermatology patients [8]; and from 2.9 to 24.9% in patients of multiple nationalities [3].

BDD affects each individual in a different way; so, its prevalence can be modified according to not only the population regarding its finding, but also regarding the original physical trait that the person assumed as a “defect.” The prevalence of BDD in patients who underwent plastic surgery procedures is around 6–20%. In patients undergoing rhinoplasty, it raises to 20.7% [50]. An essay was conducted with patients seeking for plastic surgery, and 7.7% showed BDD. Most of these patients (85.7%) were diagnosed before surgery, and the remaining (14.3%) in the post-surgery period, after they have reported dissatisfaction with the surgical results [51].

According to different researches, the prevalence of BDD in plastic surgery is around 7–15% [29]; another study points to a prevalence of 16–24% [50], and there is another that points to about 53% [52]. In Iran, a research was conducted with patients who were seeking plastic surgery. It was noticed that 41% of them had shown mental disorder, of which 24.5% were diagnosed as BDD patients. Most of the subjects of the survey were seeking for rhinoplasty and 80% of them were women [53]. The rhinoplasty surgery, in special, is a common practice in BDD patients’ community, and the diagnoses of severe cases of BDD before surgery are very frequently connected to the high level of dissatisfaction with the results after surgery [54, 55].



Among BDD patients, 76% have already considered plastic surgery as a “treatment” for their “defects,” of which most of them, 64–66%, have previously undergone some plastic surgery [53]. Although the dissatisfaction level with the results is high, the idea of perfection is based on delusional thoughts about one’s esthetics complaints, which are not reachable by cosmetic treatments or surgeries [50]. For this reason, a more comprehensive psychiatric evaluation is indicated for the patients who look for an esthetic procedure, because in the case of BDD patient, the psychological intervention is more indicated than a surgical procedure [53, 56].

Regarding the prevalence of BDD between genders, different studies have shown that although seeking for surgical esthetic treatments is more frequent in feminine population (86.4%) than in masculine population (13.6%), BDD is more prevalent in masculine gender. Among men of the sample, 33.3% presented BDD, while only 14% of women presented the disorder [36]. Therefore, although men are the minority in the researches regarding esthetics treatments, they have presented always equal or larger prevalence of BDD than women. In a German study involving 133 college students, in which 71.4% were women, there were no differences of prevalence between genders; with 5.1% of women and 5.7% of men diagnosed with BDD [57]. In another population of patients with BDD clinically diagnosed, 89% of the sample was female [58]. There is another study, in which case 64.2% of the sample is composed of women [38]. In all these reports, the prevalence of BDD was larger among men.

Comparing prevalence between genders, considering patients of general dermatological clinics, women are the most frequent costumers (69.7%), against 30.3% of men. Considering individuals who look for treatment in dermatological clinic specialized in acne, the prevalence between genders do not change compared to the first case (general dermatologic clinic). Women were 66.7% of the patients and men were 33.3%. However, in the dermatological clinics with aesthetic purposes, an increase of women clients (85.2%) and a decrease of men clients (14.8%) can be noticed [25]. In general, the prevalence of BDD is larger in esthetics dermatological clinics (14%); compared to general dermatological clinics (6.7%) and in the control group (2%), the prevalence of BDD was almost equal to the general population [48].

Comparing the prevalence of BDD and considering the level of schooling of the subjects, it has been reported in most of the samples that the BDD patients usually were attending middle school (63.3%), followed by patients who were attending primary school (36.4%). In this sample, none of the patient with BDD was attending university education [36]. In another study where patients were clinically diagnosed with BDD, 72.4% of the sample [38] and 77% of another sample [58] had university education complete or incomplete.

Regarding the prevalence of BDD and marital status of the patients, BDD patients usually have emotional impairment, remaining single (56.3%) [59]. Some studies have shown a 72.7% rate that has never been married [60]. This scenery does not seem to be modified through the years, considering that in a precedent study, the rate of BDD patients that were never married was 60.4%, the married were 25.4%, the divorced were 13.4%, and the widowers were 0.7% [38]. The age of the onset of the symptoms seems to be related to the marital status. When it shows up before 18 years old, the prevalence of singles in the sample seems to be higher (77.9%) than if it begins after 18 years old, when the prevalence of singles is a little lower (64.5%) [58].

The same happens to the work capability of the BDD patients: when the disorder starts earlier in life, the social and labor impairment usually is worse. BDD patients in which the disease started before 18 years old had more issues regarding work (65.8%) than patients in which the disorder started after this age (58.1%) [58].

Among BDD patients in treatment, 57.5% were unemployed, only 38.5% were working full time, 22.5% were working half time, and 3% were removed from work due to Medical Certificate of Health related to BDD [38].

More recently, another study showed that among OCD patients, less than half were in a full-time employment, and 27.2% was receiving work incapacity benefit [60]. Almost 39% of patients reported removal from work and 79.7% indicated some level of labor functional impairment because of the pathology. It is been noticed that patients who were removed from work because of the psychopathology of BDD presented more severe form of the disease and tended more to chronicity as well. The worse cases were usually composed by males with a lower scholarship, more severe depressive symptoms, higher rates of comorbidities, worse quality of life, worse social skills, higher rates of suicides, and higher propensity to psychiatric internment. One study concluded that being removed from work can worsen the outcome of the treatment for the patient, because it would intensify the tendency to self-isolation and depression [60]. It has to be considered, however, on the other hand, that some of these cases may be condemned to evolve badly since the onset of the disorder, due to possibly neuroanatomic lesions or malfunctions (already described earlier). The characteristics as lower scholarship, worse social skills, poverty, and worse quality of life may be associated to brain damage. We also know that male gender is more vulnerable to express this type of symptomatology. Therefore, it is possible that the same patients have to be removed from work with special care, because the removal is necessary at some point of the treatment, but the prolonged removal without care will lead to psychological worsening [60].

Hispanics or “non whites” were considered the minority of patients (19.1%) with BDD comparing the prevalence of the disease among the different ethnic groups [59], or even less than that (9.1%) in another study [60]. The Caucasian was 87.9% of BDD population under treatment in another study [38].

Concerning the way of living, 44.8% of the BDD individuals live with a spouse, 28.4% with their parents, 25.4% alone, and 1.5% need home supervision because they have special needs or comorbidities that imply in additional risks [38].

Although BDD is more often present in athletes than in regular people, the intensity of psychological problems usually is more severe in non-athletes. Therefore, the current practice of physical activity is very good for mental health. In both samples, the rate of satisfaction with body self-image presented equally low [61].

Regarding differences between genders in BDD, there are more points of similarities than differences, although much disparity can be found. Initially, the areas elected as central “loci” of BDD were different between genders, for example, men were obsessed about genitals, muscle mass amount, and hair loss. Women, on the other hand, were obsessively concerned about skin, breasts, buttocks, thighs, legs, hips, toes, and body hair, among many other parts of

the body. Women were also more predisposed to behave repetitively (compulsion), using resources like camouflage of the presumed defects and constant image check; they tend more to the neurotic excoriation and to eating disorder, as well [62].

BDD individuals usually have lower scores of self-evaluation regarding appearance and high levels of dissatisfaction to their own body compared with normal population, in both genders [4, 63]. It means that the disorder directly affects the self-body image of the patients and it is frequently associated with other disorder in which the individuals refer the fear of being negatively evaluated by other people, which is the same as what occur in the social phobia disorder (SAD). In fact, SAD is considered an outstanding feature of BDD [32, 60], even though there are remarkable differences between this theoretical constructs.

Some pathologies can be associated to BDD. A research involving BDD population sample found that the majority of the patients (71%) have not shown concerns related to body weight, but they have bigger concerns related to body parts, such as skin, hair, nose, belly, and teeth. Most of these patients were female, white, single, and have incomplete superior education. All subjects of the sample demonstrate some concern regarding another very specific area of the body, besides depressive symptoms [64].

Early surveys have been investigated SAD in BDD and concluded that these patients can have high scores of SAD, regarding appearance concerns [39, 65]. BDD rates were higher in patients with SAD compared to control population [66]. Patients with BDD had higher scores at Social Phobia Inventory (SPIN), even not having SAD diagnosed as comorbidity. It was also detected that the typical social aversion of the SAD has contributed to the functional impairment of the patients with BDD [39].

Some features in common of both pathologies have been pointed, such as anxiety and denial. One study also compared sociodemographic and clinical aspects of BDD and SAD, observing that SAD is more common in younger people with lower educational level than BDD [18]. In addition, BDD patients seem to be less propensed to marry and presented more often historic of psychiatric internment than patients with SAD [18]. Another assessment claims that individuals diagnosed with BDD are often single, avoid dating, and report high levels of social isolation [67]. With regard to comorbidities, BDD and SAD have different probabilities. Patients with BDD tend more to evolve with eating disorder or OCD, whereas patients with SAD are more likely to develop anxiety disorders [18].

Based on the above, it is important to emphasize that there are ways to distinguish BDD from SAD. One way is to consider that in BDD, there are repetitive behaviors, already mentioned, such as checking and neurotic excoriation. Besides, in BDD, the main concern of the person is focused on his/her physical appearance and his/her imaginary "defects"; whereas in the SAD, the patient is worried about the judgment that the other can do about his/her behavior and about his/her social exposure. Besides, the comorbidities in BDD are much more in number and gravity than in SAD: eating disorders (bulimia, anorexia, and vigorexia), severe depression, self-mutilation, and suicide [18, 62].

Usually, BDD begins in childhood or puberty. It starts always gradually and its development is related with low quality of life; however, there is no evidence of any difference of quality

of life or functional loss between patients in which the disorder started early or later in life [68]. Although, depending of the history of life of the individual, the outcome of the disorder can be suicidal or other comorbidity even more severe than BDD [58, 72], the majority of BDD patients have suicidal ideas (80%), and a considerable percentage of them have already presented suicidal attempts (24%) [60, 69]. Among American population, it has been noticed that suicide rates are 45 times larger in BDD patients when related to the rest of the population. It means there is a higher mortality rate in BDD than compared with what is observed in pathologies like "anorexia nervosa," severe depression, and bipolar disorder [29, 70]. Suicidal rates are most frequently observed in patients with dermatological complaints [71].

Comparing the existence of comorbidities in BDD with OCD, the rates were 27.5% and 10.4%. Both conditions presented SAD and severe depression (major depression) as the main comorbidities [72]. The association of BDD cases with psychiatric internment is estimated in 14% of the cases, while the suicide attempts are present in 22–27.5% of the cases [14, 70, 73]. Based on these possible comorbidities linked to BDD, there are studies showing that among patients with BDD, 76.4% present mood disorder, 1.8% present psychotic disorder, 70.9% present anxiety disorder, 16.4% present some type of drug abuse or addiction, 10.9% present eating disorders, 3.6% present somatoform disorder, 66.7% present some type of personality disorder, and only 1.5% do not present any kind of comorbidity [60].

Therefore, BDD at most of the time presents an important association with another psychiatric morbidity, and it can evolve to more severe conditions, like anorexia, vigorexia, bulimia, major depression, and a very high risk of suicide, besides leading to a low capability and quality of life [64, 74]. BDD is linked to other psychiatric symptoms: 80% of the cases are connected with depressive symptoms, 12% has SAD, 48.9% are linked with drug abuse, and 32.5% of the patients diagnosed with BDD have eating disorders as well [50].

There are some diseases more acknowledged and shared by media, characterized as eating disorder, but, actually, they are all derived from a primary BDD and ultimately evolve with very own traits which make easier to diagnose and to treat them. Anorexia, bulimia, and vigorexia are examples of such case [75–77]. In anorexia, BDD gets evident regarding body weight, in which case the patient's self-image is distorted and the person imagines herself/himself with lots more weight than actually has. Trying to compensate it, the patient seeks compulsively to lose these "imaginary" extra pounds by refusing to eat, exercising too much, taking pills (laxatives and diuretics), and/or self-inflicted vomiting episodes. In bulimia, BDD shows up just like anorexia, but there are previous episodes of binge eating followed by extreme regret, which leads the patient to the already described compulsive behavior to try to lose weight immediately. In vigorexia, BDD is related to body size and strength. Patient's self-image is small and weak, which makes the person eat and exercise compulsively, trying to get the maximum of possible muscle mass that one can reach, frequently using steroids to get bigger enough. There is a condition called plasticomania too, in which BDD is evident in one or multiple areas of the body, and the patient do not hesitate to undergo several plastic surgeries, trying to solve the frustration [76, 78, 79].

Although several researches have been concluded, BDD is still an underdiagnosed disease. Too many professionals that should be involved in this disorder recognition ignore the condition and its severity. In studies with patients diagnosed with depression, there are elevated rates of

BDD, but most of these patients have their BDD not noticed as the primary pathology, which, usually, lead to a failure of treatment [59]. Some patients may resist referral to psychiatrists and psychologists, because they continue to believe that their problems are physical and not psychological. It is often fruitless to try to convince these patients that their beliefs are irrational [8]. Appearance-enhancing treatments should not be implemented, because these may even exacerbate the psychological symptoms [76]. Concluding, the difficulty in recognizing and diagnosing BDD has been appointed as the main factor of morbidity and mortality of this pathology [29].

## 6. The diagnosis and treatment by a clinical perspective

This topic presents a personal perspective of a clinical psychiatrist who has practiced in several mental health settings and who aims to present one illustrative case.

During almost 20 years of clinical practice of psychiatry, I have observed several patients with what was once called “epileptical personality,” possibly involving temporal lobe disorders. They do not necessarily have seizures or absence of crises. Some of them have what it is called Geshwin’s syndrome. They usually have migraine, with photophobia and misophonia (these last two symptoms may occur not necessarily during migraine crisis). They often have reports of somnambulism (i.e., sleepwalking), night terror, nocturnal enuresis while infants or during puberty (or even in adults), and/or history of feverish crisis while in infants.

An important number of them have some relatives (grandparents, parents, cousins, siblings) with classical epilepsy, involving seizures or partial epilepsy complex, which suggests that they may have inherited a low threshold to resist a convulsion. However, they usually also have an acquired factor: premature birth delivery with complications, head trauma in the first year of life, encephalitis, and so on.

A large number of these patients evolve, usually, after puberty with changes in behavior. Some of them develop episodes of rage and mood swing. In girls, it is notorious after the menarche and gets worse during the menstrual period, showing that hormones play a very important role in these phenomena.

In males, the symptoms can be more constant because there is no hormones see-saw involved, but the onset of behavioral disturbance is related to puberty too. In addition, it can be related to violence or hostility more frequently, reminding of the explosive intermittent disorder’s described features.

With this in mind, the aim of presenting this previous information is to report a few cases of BDD patients I have seen all over these years too. They are 12 patients, and in all of them, I could find traits of epileptical personality; some of them had alterations in the electroencephalogram (EEG) test, frequently on the right temporal lobe or in both. A reduced number of cases had alterations in the frontal lobe too.

I am going to report a case of a young man who was 19 years old at the time of his first appointment. He was taken to my private practice by his parents, because he had no consciousness of his

sickness. At the day before the appointment, he had punched his father's face. It never happened before. The patient was really regretted and scared with his own behavior. His parents were really worried and shocked because, on top of all, he had just given up on Law School and was obsessed by his own image on the mirror, spending 6–9 h a day in gym working out and more than 3 or 4 h in front of the mirror, checking each part of his body. However, he wasn't happy with himself, like in the case of Narcissus myth; he was in real pain, frustrated, and the parents could hear him whispering "I'm weak, I'm thin." No matter how strong his body was, he could not notice it. He was very concerned about his hair too.

His mother said she noticed 6 months before that he was becoming a little agitated and hostile. She tried to talk to him. But he was evasive and avoidant, then she looked through his medicines and found out he was taking steroids for muscles and finasteride for hair loss. I asked about his neonatal history; his mother answered she had a little trouble during labor delivery and he was born with a reduced Apgar score, but nothing that compromised his development; he had some episodes of feverish crisis until 5 years old. But lately, in the past 4 or 5 months, he started to have night terror episodes, which he never had before. However, his younger brother used to have it at the age of 3–4 years. In addition to the night terror, he started to have intense migraine episodes during the day, with photophobia and misophonia.

The parents said he was "normal" until 6–8 months before; described him as "just a little over concerned about physical shape, but like other youngster." They confirm that he was introvert and shy during his childhood and became a little more confident after 16 years old when he started to work out. He said to me, after getting better with medication, that he used to be teased at school for being shorter than the other boys.

I deduced that this patient had some temporal lobe level of instability which leads him to feel very intense about his emotional pains. The use of steroids and finasteride may have impaired some of his brain functions, reducing his convulsive threshold. The result was more aggressivity, mood swing, and the severe BDD symptoms escalating from an original simple unhappiness with his body features.

He mentioned social anxiety since he was a boy. Therefore, he decided to work out to get stronger. At certain point, influenced by a friend, he started to take steroids and finasteride.

He started to get better after quitting the hormones and finasteride. The social anxiety and the BDD were controlled after a week taking oxcarbazepine 600 mg/day and citalopram 10 mg/day. After 6 months of treatment, he stopped medication and continued psychotherapy. I have not heard from him since 4 years ago.

## 7. Conclusions

In summary, this chapter has addressed the main characteristics and related psychopathology of the body dysmorphic disorder, as well as some clinical associations and influencing factors. Moreover, this chapter has also presented one illustrative case of the diagnosis and treatment of body dysmorphic disorder symptoms by an experienced clinical psychiatrist.

We hope that this chapter contributes to the diagnosis, prevention, treatment, and management of body dysmorphic disorder in different health-care settings, by providing a more comprehensive and integrated understanding of this underdiagnosed mental disorder.

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